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October 6, 2023

## VIA: ELECTRONIC FILING

Mr. Adam J. Teitzman Commission Clerk Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee, Florida 32399-0850

> Re: Petition of Tampa Electric Company for Approval of Depreciation Rate for Electric Vehicle Charging Stations Dkt. 20230089-EI

Dear Mr. Teitzman:

Attached for filing are Tampa Electric Company's answers to Staff's First Data Request (Nos. 1-8), propounded and served by electronic mail on September 8, 2023.

Sincerely,

Mililan n. Means

Malcolm N. Means

MNM/bml Attachment cc:

Shaw Stiller TECO Regulatory

- 1. Please refer to paragraph 11 of the TECO's petition of August 11, 2023 (Petition) for the following questions.
  - a. Has TECO completed the procurement of the 200 electric vehicle (EV) charging ports on customer premises?
  - b. How many EV charging ports on customer premises have been installed to date?
  - c. Please update the information of the in-service date, if necessary, of the Drive Smart Pilot Program (Pilot) discussed in this paragraph.
  - d. Please identify the distributor(s) and manufacturer(s) of TECO's EV charging ports.
  - e. Please provide the major technical specifications (with a full description and diagram of the equipment) of the 200 EV charging ports on customer premises.
  - f. What is a "minimum design life" of TECO's EV charging ports on customer premises according to the distributor(s)/manufacturer(s) of these charging ports?
  - g. Please discuss the warranty term, if any, associated with the EV charging ports on customer premises.
- A. a. Tampa Electric has not completed the procurement of the 200 EV charging ports on customer premises. As indicated in the company's First and Second Annual Reports for the Pilot, filed in Docket No. 20200220-E on May 18, 2022 and May 18, 2023, respectively, the company has faced challenges with fully onboarding site hosts, in part due to costs that would need to be borne by those site hosts. More recently, as noted in the Second Annual Report, new and unexpected permitting requirements continue to delay installations.

While Tampa Electric is currently unable to provide an exact date for when all ports under the Pilot will be installed, the company will continue working with site hosts, the contracted installers, and local permitting agencies to have all installations completed by April of 2025.

- b. To date, Tampa Electric has installed 50 EV charging ports on customer premises.
- c. The first EV chargers under the Drive Smart Pilot Program went into service on September 30, 2023.
- d. Tampa Electric selected NovaCharge, LLC as the EV charging equipment provider.
- e. Please see attached.
- f. The recommended minimum design life per the distributor/manufacturer NovaCharge, LLC, is seven years.
- g. The warranty term is four years and includes Maintenance and Labor.



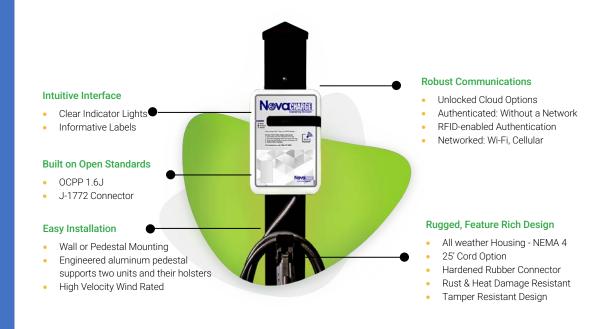
NC7000 Series EV Charging Stations

Universal Product Interoperability Open standards focus ensures compatibility. Supports Flexible Business Models Custom billing arrangements enable business agility. Scalability that —— Promotes Reliability

Remote management guarantees worry-free operation.

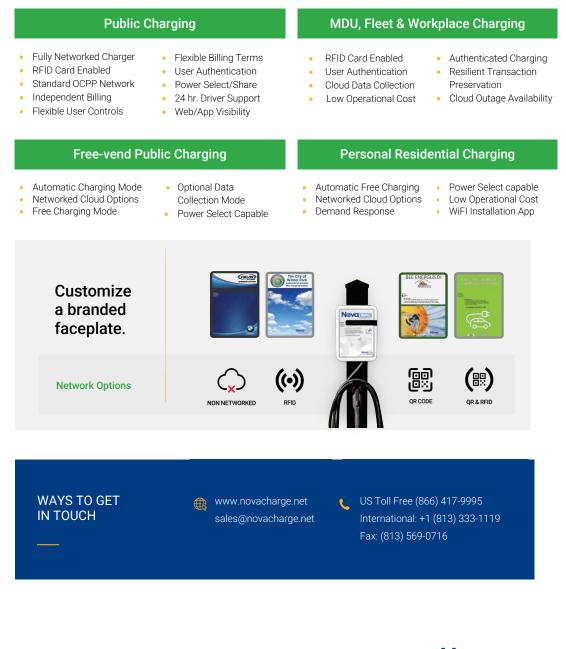
Designed to exceed the expectations of everyone.

Proven to meet the demands of commercial organizations.



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## The NC7000 delivers flexible business model adoption.



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## **Nev Cicharge**



| TECHNOLOGY                | EXPERIENCE          | PROCESS   | SUPPORT                     |
|---------------------------|---------------------|---|-----------------------------|
|                           |                     |   |                             |
| NC7                       | 000 SERIES SPECIFIC | CATIONS – US & Cana                               | ida                         |
| Electrical Specification  | S                   |   |                             |
| Charging Connector        | SAE J1772 T         | /pe 1- with Hardened Rubber V                     | Vrap for Heavy-Duty Use     |
| Input Power - Standard    |                     | Single Phase, 32A                                 |                             |
| Input Power - Custom      | 208/240VAC,         | Single Phase, With Reduced P                      | Power Options               |
| Installaton Type          |                     | r Optional NEMA 6-50 Plug                         |                             |
| Frequency                 |                     | 60Hz  |                             |
| Output Power              | 7.68kW (240\        | <u> </u>  |                             |
| Metering Accuracy         | Embedded ± 2        | 2%  |                             |
| Network & Administrat     | ive Support         |   |                             |
| Network Services Suppor   |                     | on-Cloud Options Available                        |                             |
| Unlocked Network Selecti  |                     | the-Fly Network Change-Over                       |                             |
| Standards-based EVSE C    | ,                   | Open Standard Protocol as Defi                    |                             |
| Demand Response           |                     | equires Centeral Server Open A                    | ADR Support)                |
| Secure Administrative Cha |                     | and Communications nd & Out-of-Band Diagnostic Se |                             |
| Remote Diagnostics Capa   | able Secure In-Bai  | ia & Out-oi-Bana Diagnostic Se                    | ervices                     |
| Communications & Inte     |                     |   |                             |
| Wi-Fi                     | 802.11 b/g/n        |   |                             |
| Cellular                  |                     | ory 1 [AT&T, T-Mobile or Veriz                    |                             |
| RFID/NFC                  |                     | B-ISO 15693 -NFC; NEMA Inte                       |                             |
| Cellular Signal Requireme | ents AT&T/T-Mobile: | RSRP > -90dBm; Verizon: RSI                       | RP > -90dBm & RSRQ > -10dBn |
| Material Specifications   |                     |   |                             |
| Dimensions                | 11.14" x 7.56'      | ' x 3.11"   |                             |
| Enclosure Rating / Impact | Res. NEMA 4 / IK1   | 0   |                             |
| Impact Resistance         | IK10                |   |                             |
| Charging Cable Length     | 18 ft. & 25 ft.     |   |                             |
| Mounting Type             |                     | Bollard Mount (Optional)                          |                             |
| Display                   |                     | nm, 5.57mm Character Height,                      | 5 x 8 Dot Matrix, OLED 20x2 |
| Light Indicators          |                     | r; Blue: Charging; Red: Service                   |                             |
| Holster for connector     | Click-In Holste     | er for J-1772                                     |                             |
| Environmental & Safety    | Specifications      |   |                             |
| Operating Temperature     |                     | °F (-30°C to +50°C)                               |                             |
| Storage Temperature       |                     | °F (-40°C to +70°C)                               |                             |
| Operating Humidity        | 95% RH non-         | 1   |                             |
| Safety Compliance         | UL Listed for       | USA, cUL Certified for Canada                     |                             |
|                           | UL 50/991/14        | 49/1998/2231/2594                                 |                             |
|                           | ECC Dart 155        | 145 047 (M/ E) / ECC Dort 15 (                    |                             |

## NC7000 SERIES LIMITED WARRANTY

NovaCHARGE warrants that this product shall be free of defects in materials and workmanship under normal use for a period of four (4) years (Commercial) or three (2) years (Residential) from the date of delivery. For complete warranty information, contact NovaCHARGE at <u>info@NovaCHARGE.net</u>.

FCC Part 15B/15.247 (Wi-Fi) / FCC Part 15.225 (RFID) Overload Protection & Ground Fault Detection

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- 2. Please refer to paragraphs 11 12 and 19 of the Petition for the following questions.
  - a. Please identify the similarities and differences between TECO's "EV charging ports on customer premises" and Duke Energy Florida's EV direct current fast charger (DCFC).
  - b. Please explain in detail why an average service life (ASL) of 10 years and a net salvage (NS) of zero percent are the appropriate depreciation parameters for TECO's Pilot-related EV charging ports.
- A. a. While Tampa Electric does not have direct knowledge of the specifications for the DCFC equipment chosen by Duke Energy Florida, generally speaking, the primary difference is presumed to be the power requirements to operate the equipment, which subsequently impacts the potential charging rate. Tampa Electric's "EV charging ports on customer premises" are primarily Level 2 chargers requiring 240-Volt service. The hardware included in Tampa Electric's program has a maximum power output capability of 7.68kW. For DCFC that will be installed under Tampa Electric's program, the minimum power output is expected to be 50kW. Tampa Electric has not completed a DCFC installation as of the date of this response, and final specifications will be determined based on equipment availability at the time of installation and working with the site host to ensure any specific needs are being considered.
  - b. The average service life ("ASL") of 10 years is based on the expectation that EV charging stations will last longer than the vendor's minimum design life of 7-years. Tampa Electric requested an NS of 0 percent and is consistent with Duke Energy Florida's approved ASL of 10 years and 0 percent NS for EV chargers.

- **3.** Please refer to paragraphs 11, 13, and 16 17 of the Petition for the following questions.
  - a. How many non-Pilot company-owned charging stations does TECO have in operation?
  - b. How many Pilot-related company-owned charging stations does TECO plan to add?
  - c. Please provide a full description and diagram of the equipment that constitutes a "company-owned EV charging station" (for both Pilot and non-Pilot-related plant).
  - d. Please identify the similarities and differences between TECO's "EV charging ports on customer premises" specified in paragraph 11 and TECO's "company-owned EV charging station equipment" for both Pilot and non-Pilot-related devices as discussed in paragraphs 13 and 16, respectively.
  - e. Please discuss the warranty term, if any, associated with TECO's existing "company-owned EV charging stations."
  - f. Please explain in detail why an ASL of 10 years and a NS of zero percent are appropriate for TECO's "company-owned EV charging station equipment" (for both Pilot and non-Pilot-related plant).
  - g. What is the "minimum design life" of TECO's "company-owned EV charging stations" (existing and planning to add, if known) according to the distributor(s)/manufacturer(s) of these charging devices?
  - h. Since TECO "began purchasing these (non-Pilot charging) stations (on company property) in 2019" (paragraph 16), a certain amount of these plan assets have lived through half of the plant's ASL per TECO's 10-year ASL proposal. Please identify the dollar amount of the plant retirement, if any, and the associated cost of removal and NS.
  - i. Regarding TECO's existing non-Pilot EV charging stations, please identify the respective plant and reserve amounts that are currently booked in Account 394.00 Tools Shop & Garage Equipment.
- **A.** a. Tampa Electric has 66 non-Pilot company-owned charging stations.
  - b. Aside from the 50 Pilot-related EV charge ports already installed, Tampa Electric plans to add 150 additional Level 2 Pilot-related charge ports across the five designated market segments. The company also plans to develop

up to four DCFC sites, with each site having a dual-port DCFC unit and two Level 2 charge ports.

- c. Please see attached.
- d. Across the two types of chargers for Pilot and non-Pilot-related EV charging equipment (Level 2 and DCFC), the capabilities are quite similar across all equipment within each type. All Level 2 chargers are capable of approximately the same power output, utilize access controls, are connected to network services, and utilize the same J-1772 connector. The network operator may be different by equipment manufacturer, but all with similar capabilities to manage the software required to operate the hardware. Tampa Electric currently has one DCFC installed, which is a non-Pilot charging station. Similar to the Level 2 chargers, we expect Pilot-related DCFC will have similar operational capabilities, but likely with different power output, as the non-Pilot equipment has a 50kW maximum power output, and today's typical DCFC charging locations have a 100kW minimum output to support faster EV charging.
- e. The warranty terms for company-owned EV charging stations will vary based on manufacturer. Some existing company-owned EV charging stations are no longer under warranty and may have varied from one to five years at the time of installation. Non-Pilot EV charging stations installed more recently, and all Pilot EV charging stations, are warranted to be free of defects in materials and workmanship under normal use for a period of four years.
- f. See Tampa Electric's Response to Data Request No. 2(b), above.
- g. According to the distributor/manufacturer of Tampa Electric's companyowned EV charging stations, the minimum design life is seven years.
- h. Tampa Electric began installation of the non-Pilot EV charging station in 2019 and has not had to retire any assets nor had to remove any assets.
- i. As of September 30, 2023, the non-Pilot EV charging stations balances that are currently booked in Account 394.00 Tools Shop & Garage Equipment are \$398,747 for plant and \$71,837 for the reserve amounts.



## **Quick Charge Station**

#### Overview

- Fast-charge any compatible vehicle
- 0 to 80% in less than 30 minutes
- Multistandard (CHAdeMO and CCS compliant)
- TFT color display (for user interface and publicity)
- Network integration (OCPP or proprietary protocol)
- Built-in communications (3G; LAN; Wi-Fi)
- Optional 2 piece configuration (kiosk/terminal)







DC plug-in charging systems

Qela

### Main feature

CCS

- Multiple standards
- Multiple outputs
- DC power up to 50 kW
- High efficiency: > 93%
- High power factor: 0.98
- Simple plug & play installation
- Standalone or network integration

CHΛdeMO

- · Local and remote control and monitoring
- C4 corrosion protection
- Customizable

Product description

The QC45 is a Quick Charging station able to charge all EVs with CHAdeMO and CCS charging compliance.

After user identification (if authentication is required), by simply choosing the charging standard compatible to your vehicle and coupling the charger's output plug to the EV, you will have a fast secured and proven charging process. The battery charging status is displayed and the charging cycle finishes by itself or can be terminated by an user command.

Different output options are available, like the basic single DC output, dual DC output, in a single cabinet or bundled with a wired charging interface kiosk.

The QC45 includes Efacec's power electronics unique design, resulting in top specifications for DC fast charging. Higher power output with best power factor and efficiency.

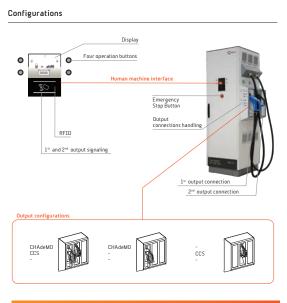


Due

mod. CS283I1505B1

#### Technical Information

| Technical data   | ETL   |
|--|---|
| AC Nominal Input for DC Output                                     |   |
| Phases / lines   | 3 phases + PE   |
| Voltage & frequency  | 480 Vac ± 10 %; 60 Hz   |
| Nominal input current & power                                      | 64 A, 50 kVA  |
| Efficiency   | > 93 %  |
| Power factor   | 0,98  |
| AC Nominal Input (Optional)  |   |
| N  | OT AVAILABLE  |
| DC Output  |   |
| Voltage  | 50 Vdc to 500 Vdc   |
| Current  | 0 to 120 A  |
| Nominal Power (@ 400V)   | 45 kW continuous / 50 kW peak   |
| AC Output (optional)   |   |
| N  | OT AVAILABLE  |
| General Specifications   |   |
| Equipment  | Multi-standard DC outputs (Mode-4)  |
| Communication with EV  | JEVS G104 (CHAdeMO)<br>IEC61851-23 PLC (SAE / Type-1)   |
| DC Plugs   | JEVS G105 (CHAdeMO)<br>Combo T1 (SAE / Type-1)  |
| Human Machine Interface<br>Display<br>RFID system<br>Communication | By default<br>6.4" TFT Color screen<br>Mifare (Classic, DesFire EV1) or others on request<br>3G (GSM or CDMA)   LAN   Wi-Fi |
| Communication Protocols  | OCPP (1.2; 1.5) and others  |
| Place of installation  | Indoor/Outdoor  |
| Altitude   | Up to 1000 m  |
| Protection degree  | IP54   IK10   NEMA 3R   |
| Operating Temperature  | -13 °F to +122 °F   |
| Optional Cold Option   | -31 °F to 122 °F  |
| Storage Temperature  | -40 to +140 °F  |
| Humidity   | 5 % to 95 %   |
| Sound noise  | <55 dB in all directions  |
| Dimensions (W x D x H)   | 23.6 x 23.6 x 70.9 inches   |
| Weight   | 1323 pounds   |

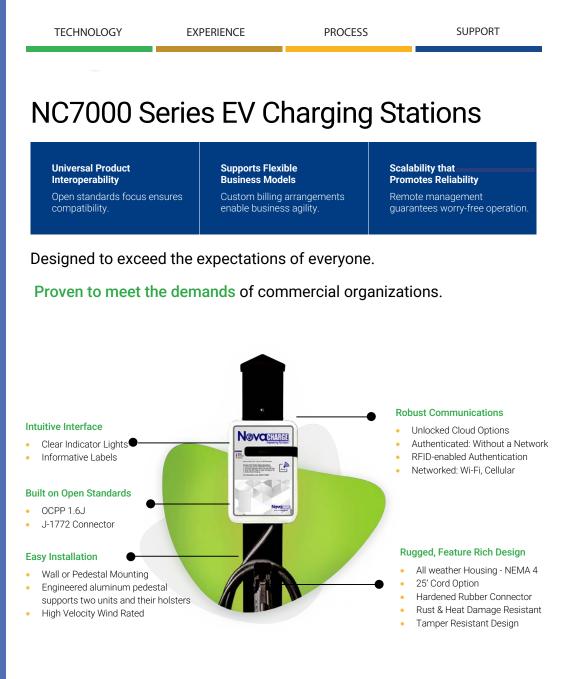


- Highways and national roads
- Fuel-stations (City and strategic locations)
- EV Infrastructure and operators
- EV fleet (private and public)
- EV dealers and service providers



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## The NC7000 delivers flexible business model adoption.

| Public   | Charging   | MDU, Fleet & Workplace Charging   |
|--|--|---|
| <ul> <li>Fully Networked Charger</li> <li>RFID Card Enabled</li> <li>Standard OCPP Network</li> <li>Independent Billing</li> <li>Flexible User Controls</li> </ul> | <ul> <li>Flexible Billing Terms</li> <li>User Authentication</li> <li>Power Select/Share</li> <li>24 hr. Driver Support</li> <li>Web/App Visibility</li> </ul> | <ul> <li>RFID Card Enabled</li> <li>User Authentication</li> <li>Cloud Data Collection</li> <li>Low Operational Cost</li> <li>Authenticated Chargin</li> <li>Resilient Transaction<br/>Preservation</li> <li>Cloud Outage Availabil</li> </ul>  |
| Free-vend P  | ublic Charging   | Personal Residential Charging   |
| <ul><li>Automatic Charging Mode</li><li>Networked Cloud Options</li><li>Free Charging Mode</li></ul>   | <ul><li> Optional Data<br/>Collection Mode</li><li> Power Select Capable</li></ul>   | <ul> <li>Automatic Free Charging</li> <li>Networked Cloud Options</li> <li>Demand Response</li> <li>WiFI Installation App</li> </ul>  |
| Customize<br>a branded<br>faceplate.   |  | The city of |
| Network Options  | ~~~ `  |   |
| WAYS TO GET  | 🕀 www.novacharg  | e.net US Toll Free (866) 417-9995   |
| IN TOUCH   | sales@novachar   |   |





| NC7000 SERIES SPECIFICATIONS – US & Canada         Electrical Specifications         Charging connector         SAE J1772 Type 1- with Hardened Rubber Wrap for Heavy-Duly Use         Input Power - Standard         100/2012/000000000000000000000000000000  | TECHNOLOGY   | EXPERIENCE        | PROCESS  | SUPPORT                      |
|--|--|-------------------|--|------------------------------|
| Electrical Specifications         Charging Connector       SAE J1772 Type 1- with Hardened Rubber Wrap for Heavy-Duty Use         Input Power - Standard       208/240VAC, Single /Split Phase, 32A, WYE Configuration         Input Power - Oustom       208/240VAC, Single /Split Phase, 32A, WYE Configuration         Installaton Type       Hard-Wired or Optional NEMA 6-50 Plug         Frequency       60Hz         Output Power       7.68kW (240VAC,@32A)         Metering Accuracy       Embedded ± 2%         Network & Administrative Support       OCPP and Non-Cloud Options Available         Unlocked Network Selection       Supports On-the-Fly Network Change-Over         Standards-based EVSE Control       OCPP 1.6J (Open Standard Protocol as Defined by OCA)         Demand Response       OpenADR (Requires Centeral Server Open ADR Support)         Secure Administrative Channel       Provides In-Band & Out-of-Band Diagnostic Services         Communications & Interfaces       W+Fi         802.11 b/g/n       Gellular         Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         RFID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       11.14* x 7.56* x 3.11*         Dimens  | NOZO   |                   |  |                              |
| Charging Connector         SAE J1772 Type 1- with Hardened Rubber Wrap for Heavy-Duty Use           Input Power - Standard         208/240VAC, Single/Split Phase, 32A, WYE Configuration           Input Power - Custom         208/240VAC, Single/Split Phase, 32A, WYE Configuration           Installaton Type         Hard-Wired or Optional NEMA 6-50 Plug           Frequency         60Hz           Output Power         7.68kW (240VAC, @32A)           Metering Accuracy         Embedded ± 2%           Network & Administrative Support         OCPP and Non-Cloud Options Available           Unlocked Network Selection         Supports On-the-Fly Network Change-Over           Standards-based EVSE Control         OCPP 1.6J (Open Standard Protocol as Defined by OCA)           Demand Response         OpenADR (Requires Centeral Services           Communications & Interfaces         Wi-Fi           802.11 b/g/n         Gellular           4G-LTE Category 1 [AT&T, T-Mobile or Verizon]           RFID/NFC         ISO 14443 X/B-ISO 15693 -NFC; NEMA Interoperability Protocol           Cellular         AG&LTE Category 1 [AT&T, T-Mobile or Verizon]           RFID/NFC         ISO 14443 X/B-ISO 15693 -NFC; NEMA Interoperability Protocol           Cellular Signal Requirements         AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm           Material Specifications         NEMA 4  | NC/U   | UU SERIES SPECIFI | CATIONS - US & Can   | ada                          |
| Input Power - Standard       208/240VAC, Single/Split Phase, 32A, WYE Configuration         Input Power - Custom       208/240VAC, Single Phase, With Reduced Power Options         Installation Type       Hard-Wired or Optional NEMA 6-50 Plug         Frequency       60Hz         Output Power       7.68kW (240VAC@32A)         Metering Accuracy       Embedded ± 2%         Network & Administrative Support       OCPP and Non-Cloud Options Available         Unlocked Network Selection       Supports On-the-Fly Network Change-Over         Standards-based EVSE Control       OCPP 1.6J (Open Standard Protocol as Defined by OCA)         Demand Response       OpenADR (Requires Centeral Server Open ADR Support)         Secure Administrative Channel       Provides In-Band Communications         Remote Diagnostics Capable       Secure In-Band & Out-of-Band Diagnostic Services         Communications & Interfaces       Wi-Fi         802.11 b/g/n       Cellular         4G-LTE Category 1 [AT&T, T-Mobile or Verizon]       Isto 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       Dimensions       11.14" x 7.56" x 3.11"         Enclosure Rating / Impact Res.       NEMA 4 / IK10       Impact Resistance         Itition  | Electrical Specifications  |                   |  |                              |
| Input Power - Custom       208/240VAC, Single Phase, With Reduced Power Options         Installation Type       Hard-Wired or Optional NEMA 6-50 Plug         Frequency       60Hz         Output Power       7.68kW (240VAC@32A)         Metering Accuracy       Embedded ± 2%         Network & Administrative Support       OCPP and Non-Cloud Options Available         Unlocked Network Selection       Supports On-the-Fly Network Change-Over         Standards-based EVSE Control       OCPP 1.6J (Open Standard Protocol as Defined by OCA)         Demand Response       OpenADR (Requires Centeral Server Open ADR Support)         Secure Administrative Channel       Provides In-Band Communications         Remote Diagnostics Capable       Secure In-Band & Out-of-Band Diagnostic Services         Communications & Interfaces       W-Fi         802.11 b/g/n       ISO 14443 AVB-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         REID/NFC       ISO 14443 AVB-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       Dimensions         Dimensions       11.14" x 7.56" x 3.11"         Innpact Resistance       IK10         Impact Resistance  | Charging Connector   | SAE J1772 1       | ype 1- with Hardened Rubber                                  | Wrap for Heavy-Duty Use      |
| Installaton Type     Hard-Wired or Optional NEMA 6-50 Plug       Frequency     60Hz       Output Power     7.68kW (240VAC@32A)       Metering Accuracy     Embedded ± 2%       Network & Administrative Support     OCPP and Non-Cloud Options Available       Unlocked Network Selection     Supports On-the-Fly Network Change-Over       Standards-based EVSE Control     OCPP 1.6J (Open Standard Protocol as Defined by OCA)       Demand Response     OpenADR (Requires Centeral Server Open ADR Support)       Secure Administrative Channel     Provides In-Band Communications       Remote Diagnostics Capable     Secure Administrative Channel       Provides In-Band Communications     802.11 b/g/n       Cellular     4G-LTE Category 1 [AT&T, T-Mobile or Verizon]       RFID/NFC     ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol       Cellular Signal Requirements     AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm       Material Specifications     Dimensions       Dimensions     11.14" x 7.56" x 3.11"       Enclosure Rating / Impact Res.     NEMA 4 / IK10       Impact Resistance     IK10       Charging Cable Length     18 ft. & 25 ft. Options       Mounting Type     Wall Mount & Bollard Mount (Optional)       Display     116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2       Light Indicators     Greeen: Ready, Blu  |  |                   | 0 1  |                              |
| Frequency       60Hz         Output Power       7.68kW (240VAC@32A)         Metering Accuracy       Embedded ± 2%         Network & Administrative Support       OCPP and Non-Cloud Options Available         Unlocked Network Selection       Supports On-the-Fly Network Change-Over         Standards-based EVSE Control       OCPP 1.6J (Open Standard Protocol as Defined by OCA)         Demand Response       OpenADR (Requires Centeral Server Open ADR Support)         Secure Administrative Channel       Provides In-Band Communications         Remote Diagnostics Capable       Secure In-Band & Out-of-Band Diagnostic Services         Communications & Interfaces       Wi-Fi         802.11 b/g/n       Cellular         4G-LTE Category 1 [AT&T, T-Mobile or Verizon]       RFID/NFC         Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         RFID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular       4T&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       Dimensions       11.14* x 7.56* x 3.11*         Dimensions       11.14* x 7.56* x 3.11*       Charging Cable Length         18 ft. & 25 ft. Options       Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.5/mm Character Height, 5 x 8 Dot Matrix  | A set a second s |                   |  | Power Options                |
| Output Power       7.68kW (240VAC@32A)         Metering Accuracy       Embedded ± 2%         Network & Administrative Support       OCPP and Non-Cloud Options Available         Unlocked Network Selection       Supports On-the-Fly Network Change-Over         Standards-based EVSE Control       OCPP 1.6J (Open Standard Protocol as Defined by OCA)         Demand Response       OpenADR (Requires Centeral Server Open ADR Support)         Secure Administrative Channel       Provides In-Band & Out-of-Band Diagnostic Services         Communications & Interfaces       Wi-Fi         802.11 b/g/n       Cellular         Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         REID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       11.14" x 7.56" x 3.11"         Dimensions       11.14" x 7.56" x 3.11"         Enclosure Rating / Impact Res.       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5rmm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Char  |  |                   | or Optional NEMA 6-50 Plug                                   |                              |
| Metering Accuracy         Embedded ± 2%           Network & Administrative Support         OCPP and Non-Cloud Options Available.           Unlocked Network Selection         Supports On-the-Fly Network Change-Over           Standards-based EVSE Control         OCPP 1.6J (Open Standard Protocol as Defined by OCA)           Demand Response         OpenADR (Requires Centeral Server Open ADR Support)           Secure Administrative Channel         Provides In-Band Communications           Remote Diagnostics Capable         Secure In-Band & Out-of-Band Diagnostic Services           Communications & Interfaces         Wi-Fi           802.11 b/g/n         Cellular           Cellular         4G-LTE Category 1 [AT&T, T-Mobile or Verizon]           RFID/NFC         ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol           Cellular Signal Requirements         AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm           Material Specifications         11.14* x 7.56* x 3.11*           Dimensions         11.14* x 7.56* x 3.11*           Enclosure Rating / Impact Res.         NEMA 4 / IK10           Impact Resistance         IK10           Charging Cable Length         18 ft. & 25 ft. Options           Mounting Type         Wall Mount & Bollard Mount (Optional)           Display         116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OL   |  |                   | (1.0.000.1)  |                              |
| Network & Administrative Support       OCPP and Non-Cloud Options Available         Unlocked Network Selection       Supports On-the-Fly Network Change-Over         Standards-based EVSE Control       OCPP 1.6J (Open Standard Protocol as Defined by OCA)         Demand Response       OpenADR (Requires Centeral Server Open ADR Support)         Secure Administrative Channel       Provides In-Band Communications         Remote Diagnostics Capable       Secure In-Band & Out-of-Band Diagnostic Services         Communications & Interfaces       Wi-Fi         802.11 blg/n       Cellular         Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         RFID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       11.14* x 7.56* x 3.11*         Enclosure Rating / Impact Res.       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772 <td></td> <td></td> <td colspan="2"></td>   |  |                   |  |                              |
| Network Services Support         OCPP and Non-Cloud Options Available           Unlocked Network Selection         Supports On-the-Fly Network Change-Over           Standards-based EVSE Control         OCPP 1.6J (Open Standard Protocol as Defined by OCA)           Demand Response         OpenADR (Requires Centeral Server Open ADR Support)           Secure Administrative Channel         Provides In-Band Communications           Remote Diagnostics Capable         Secure In-Band & Out-of-Band Diagnostic Services           Communications & Interfaces         Wi-Fi           802.11 b/g/n         Cellular           Cellular         4G-LTE Category 1 [AT&T, T-Mobile or Verizon]           RFID/NFC         ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol           Cellular Signal Requirements         AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm           Material Specifications         Dimensions         11.14" x 7.56" x 3.11"           Enclosure Rating / Impact Res.         NEMA 4 / IK10         Impact Resistance           Impact Resistance         IK10         Charging Cable Length         18 ft. 8 25 ft. Options           Mounting Type         Wall Mount & Bollard Mount (Optional)         Display         116mm x 8 Somm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2           Light Indicators         Green: Ready; Blue: Charging; Red: Service         Holster for J-177                                   |  |                   | 2 /0   |                              |
| Unlocked Network Selection       Supports On-the-Fly Network Change-Over         Standards-based EVSE Control       OCPP 1.6J (Open Standard Protocol as Defined by OCA)         Demand Response       OpenADR (Requires Centeral Server Open ADR Support)         Secure Administrative Channel       Provides In-Band Communications         Remote Diagnostics Capable       Secure In-Band & Out-of-Band Diagnostic Services         Communications & Interfaces       Wi-Fi         802.11 b/g/n       Cellular         Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         RFID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       11.14* x 7.56* x 3.11*         Dimensions       11.14* x 7.56* x 3.11*         Enclosure Rating / Impact Res.       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & S   | Network & Administrativ  | e Support         |  |                              |
| Standards-based EVSE Control       OCPP 1.6J (Open Standard Protocol as Defined by OCA)         Demand Response       OpenADR (Requires Centeral Server Open ADR Support)         Secure Administrative Channel       Provides In-Band Communications         Remote Diagnostics Capable       Secure In-Band & Out-of-Band Diagnostic Services         Communications & Interfaces       Wi-Fi         802.11 b/g/n       Cellular         Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         RFID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       Dimensions       11.14" x 7.56" x 3.11"         Enclosure Rating / Impact Res.       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature         Operating Temperature       -40°F to +158°F (-40°C to +70°C) </td <td>Network Services Support</td> <td>OCPP and N</td> <td>on-Cloud Options Available</td> <td></td> | Network Services Support   | OCPP and N        | on-Cloud Options Available                                   |                              |
| Demand Response         OpenADR (Requires Centeral Server Open ADR Support)           Secure Administrative Channel         Provides In-Band Communications           Remote Diagnostics Capable         Secure In-Band & Out-of-Band Diagnostic Services           Communications & Interfaces         Wi-Fi         802.11 b/g/n           Cellular         4G-LTE Category 1 [AT&T, T-Mobile or Verizon]           RFID/NFC         ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol           Cellular Signal Requirements         AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm           Material Specifications         Dimensions         11.14" x 7.56" x 3.11"           Enclosure Rating / Impact Res.         NEMA 4 / IK10         Impact Resistance           Impact Resistance         IK10         Charging Cable Length         18 ft. & 25 ft. Options           Mounting Type         Wall Mount & Bollard Mount (Optional)         Display         116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2           Light Indicators         Green: Ready; Blue: Charging; Red: Service         Holster for J-1772           Environmental & Safety Specifications         Operating Temperature         -22°F to +122°F (-30°C to +50°C)           Operating Temperature         -40°F to +158°F (-40°C to +70°C)         Operating Humidity  |  |                   |  |                              |
| Secure Administrative Channel         Provides In-Band Communications           Remote Diagnostics Capable         Secure In-Band & Out-of-Band Diagnostic Services           Communications & Interfaces         Wi-Fi         802.11 b/g/n           Cellular         4G-LTE Category 1 [AT&T, T-Mobile or Verizon]           RFID/NFC         ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol           Cellular Signal Requirements         AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm           Material Specifications         11.14" x 7.56" x 3.11"           Dimensions         11.14" x 7.56" x 3.11"           Enclosure Rating / Impact Res.         NEMA 4 / IK10           Impact Resistance         IK10           Charging Cable Length         18 ft. & 25 ft. Options           Mounting Type         Wall Mount & Bollard Mount (Optional)           Display         116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2           Light Indicators         Green: Ready; Blue: Charging; Red: Service           Holster for connector         Click-In Holster for J-1772           Environmental & Safety Specifications         Operating Temperature           -40°F to +158°F (-40°C to +70°C)         Storage Temperature           -40°F to +158°F (-40°C to +70°C)         Storage Temperature   | Standards-based EVSE Co  |                   |  |                              |
| Remote Diagnostics Capable       Secure In-Band & Out-of-Band Diagnostic Services         Communications & Interfaces       Wi-Fi       802.11 b/g/n         Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         RFID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       I1.14" x 7.56" x 3.11"         Enclosure Rating / Impact Res.       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature         -22°F to +122°F (-30°C to +50°C)       Storage Temperature         -40°F to +158°F (-40°C to +70°C)       Operating Humidity  |  |                   |  | ADR Support)                 |
| Communications & Interfaces         Wi-Fi       802.11 b/g/n         Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         RFID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       Iso 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       Iso 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Charging Cable Length       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Mounting Type       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature         Operating Temperature       -22°F to +122°F (-30°C to +50°C)         Storage Temperature       -40°F to +158°F (-40°C to +70°C) </td <td></td> <td></td> <td></td> <td></td>                                 |  |                   |  |                              |
| Wi-Fi802.11 b/g/nCellular4G-LTE Category 1 [AT&T, T-Mobile or Verizon]RFID/NFCISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability ProtocolCellular Signal RequirementsAT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBmMaterial SpecificationsDimensionsDimensions11.14" x 7.56" x 3.11"Enclosure Rating / Impact Res.NEMA 4 / IK10Impact ResistanceIK10Charging Cable Length18 ft. & 25 ft. OptionsMounting TypeWall Mount & Bollard Mount (Optional)Display116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2Light IndicatorsGreen: Ready; Blue: Charging; Red: ServiceHolster for connectorClick-In Holster for J-1772Environmental & Safety SpecificationsOperating Temperature-22°F to +122°F (-30°C to +50°C)Storage Temperature-40°F to +158°F (-40°C to +70°C)Operating Humidity95% RH non-condensing  | Remote Diagnostics Capab   | le Secure In-Ba   | nd & Out-of-Band Diagnostic S                                | Services                     |
| Cellular       4G-LTE Category 1 [AT&T, T-Mobile or Verizon]         RFID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       Dimensions       11.14" x 7.56" x 3.11"         Enclosure Rating / Impact Res.       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature         -22°F to +122°F (-30°C to +50°C)       Storage Temperature         -40°F to +158°F (-40°C to +70°C)       Operating Humidity  | Communications & Inter   | faces             |  |                              |
| RFID/NFC       ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol         Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       Dimensions       11.14" x 7.56" x 3.11"         Enclosure Rating / Impact Res.       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature         -22°F to +122°F (-30°C to +50°C)       Storage Temperature         -40°F to +158°F (-40°C to +70°C)       Operating Humidity   | Wi-Fi  | 802.11 b/g/n      |  |                              |
| Cellular Signal Requirements       AT&T/T-Mobile: RSRP > -90dBm; Verizon: RSRP > -90dBm & RSRQ > -10dBm         Material Specifications       11.14" x 7.56" x 3.11"         Dimensions       11.14" x 7.56" x 3.11"         Enclosure Rating / Impact Res.       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature       -22°F to +122°F (-30°C to +50°C)         Storage Temperature       -40°F to +158°F (-40°C to +70°C)       Operating Humidity  | Cellular   | 4G-LTE Cate       | gory 1 [AT&T, T-Mobile or Veri                               | zon]                         |
| Material Specifications         Dimensions       11.14" x 7.56" x 3.11"         Enclosure Rating / Impact Res.       NEMA 4 / IK10         Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature         -22°F to +122°F (-30°C to +50°C)       storage Temperature         -40°F to +158°F (-40°C to +70°C)       95% RH non-condensing  | RFID/NFC   | ISO 14443 A       | ISO 14443 A/B-ISO 15693 -NFC; NEMA Interoperability Protocol |                              |
| Dimensions         11.14" x 7.56" x 3.11"           Enclosure Rating / Impact Res.         NEMA 4 / IK10           Impact Resistance         IK10           Charging Cable Length         18 ft. & 25 ft. Options           Mounting Type         Wall Mount & Bollard Mount (Optional)           Display         116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2           Light Indicators         Green: Ready; Blue: Charging; Red: Service           Holster for connector         Click-In Holster for J-1772           Environmental & Safety Specifications         Operating Temperature           -22°F to +122°F (-30°C to +50°C)         Storage Temperature           -40°F to +158°F (-40°C to +70°C)         Operating Humidity   | Cellular Signal Requiremen   | ts AT&T/T-Mobile  | : RSRP > -90dBm; Verizon: RS                                 | SRP > -90dBm & RSRQ > -10dBm |
| Dimensions11.14" x 7.56" x 3.11"Enclosure Rating / Impact Res.NEMA 4 / IK10Impact ResistanceIK10Charging Cable Length18 ft. & 25 ft. OptionsMounting TypeWall Mount & Bollard Mount (Optional)Display116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2Light IndicatorsGreen: Ready; Blue: Charging; Red: ServiceHolster for connectorClick-In Holster for J-1772Environmental & Safety SpecificationsOperating Temperature-22°F to +122°F (-30°C to +50°C)Storage Temperature-40°F to +158°F (-40°C to +70°C)Operating Humidity95% RH non-condensing   | Material Specifications  |                   |  |                              |
| Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature         -22°F to +122°F (-30°C to +50°C)       Storage Temperature         -40°F to +158°F (-40°C to +70°C)       Operating Humidity  |  | 11.14" x 7.56     | " x 3.11"  |                              |
| Impact Resistance       IK10         Charging Cable Length       18 ft. & 25 ft. Options         Mounting Type       Wall Mount & Bollard Mount (Optional)         Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature         -22°F to +122°F (-30°C to +50°C)       Storage Temperature         -40°F to +158°F (-40°C to +70°C)       Operating Humidity  | Enclosure Rating / Impact F  | Res. NEMA 4 / IK  | 10   |                              |
| Mounting Type     Wall Mount & Bollard Mount (Optional)       Display     116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2       Light Indicators     Green: Ready; Blue: Charging; Red: Service       Holster for connector     Click-In Holster for J-1772       Environmental & Safety Specifications     Operating Temperature       -22°F to +122°F (-30°C to +50°C)       Storage Temperature     -40°F to +158°F (-40°C to +70°C)       Operating Humidity     95% RH non-condensing   |  |                   |  |                              |
| Display       116mm x 8.5mm, 5.57mm Character Height, 5 x 8 Dot Matrix, OLED 20x2         Light Indicators       Green: Ready; Blue: Charging; Red: Service         Holster for connector       Click-In Holster for J-1772         Environmental & Safety Specifications       Operating Temperature         -22°F to +122°F (-30°C to +50°C)       Storage Temperature         -40°F to +158°F (-40°C to +70°C)       Operating Humidity   | Charging Cable Length  | 18 ft. & 25 ft.   |  |                              |
| Light Indicators     Green: Ready; Blue: Charging; Red: Service       Holster for connector     Click-In Holster for J-1772       Environmental & Safety Specifications       Operating Temperature     -22°F to +122°F (-30°C to +50°C)       Storage Temperature     -40°F to +158°F (-40°C to +70°C)       Operating Humidity     95% RH non-condensing   | Mounting Type  | Wall Mount &      |  |                              |
| Holster for connector     Click-In Holster for J-1772       Environmental & Safety Specifications       Operating Temperature     -22°F to +122°F (-30°C to +50°C)       Storage Temperature     -40°F to +158°F (-40°C to +70°C)       Operating Humidity     95% RH non-condensing   | Display  | 116mm x 8.5       |  |                              |
| Environmental & Safety Specifications         Operating Temperature       -22°F to +122°F (-30°C to +50°C)         Storage Temperature       -40°F to +158°F (-40°C to +70°C)         Operating Humidity       95% RH non-condensing   | Light Indicators   | Green: Read       | y; Blue: Charging; Red: Service                              | e                            |
| Operating Temperature-22°F to +122°F (-30°C to +50°C)Storage Temperature-40°F to +158°F (-40°C to +70°C)Operating Humidity95% RH non-condensing  | Holster for connector  | Click-In Hols     | er for J-1772  |                              |
| Operating Temperature-22°F to +122°F (-30°C to +50°C)Storage Temperature-40°F to +158°F (-40°C to +70°C)Operating Humidity95% RH non-condensing  | Environmental & Safety S   | Specifications    |  |                              |
| Storage Temperature     -40°F to +158°F (-40°C to +70°C)       Operating Humidity     95% RH non-condensing  |  |                   | 2°F (-30°C to +50°C)   |                              |
| Operating Humidity 95% RH non-condensing   |  |                   |  |                              |
| Safety Compliance UL Listed for USA, cUL Certified for Canada  |  |                   | ( )  |                              |
|  |  | UL Listed for     | USA, cUL Certified for Canada                                | а                            |

## NC7000 SERIES LIMITED WARRANTY

NovaCHARGE warrants that this product shall be free of defects in materials and workmanship under normal use for a period of three (3) years (Commercial) or three (2) years (Residential) from the date of delivery. For complete warranty information, contact NovaCHARGE at <u>info@NovaCHARGE.net</u>.

UL 50/991/1449/1998/2231/2594

FCC Part 15B/15.247 (Wi-Fi) / FCC Part 15.225 (RFID) Overload Protection & Ground Fault Detection

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## **ChargeP**\*Int by Coulomb Technologie

## **ChargePoint Networked Charging Stations CT500**



ChargePoint® Networked Charging Stations, by Coulomb Technologies, offer municipalities, corporations, fleets, and utilities, high-reliability, plug-in electric vehicle charging that drivers prefer. The easy-to-use stations provide multiple power options, integrating aesthetics and ergonomics with sturdy construction-ideal for residential, commercial and outdoor public applications.

The CT500 charging station is a 7.2 kW single output station designed for single and multi-family homes, apartments and condominium buildings, light commercial and fleet applications for the North American marketplace. The station delivers Level II (208/240 V @ 30 A) charging and is compatible with plug-in electric vehicles that comply with the SAE J1772  $^{\rm m}$  plug-in electric vehicle charging standard. The station's small size and flexible interfaces for utility Automatic Meter Infrastructure (AMI) make it an ideal solution for homeowners, utilities, fleet managers, and property managers.

To eliminate energy theft and to enhance safety, a card reader option is available for drivers to access and energize the station with a ChargePass<sup>™</sup> card. The station's highly visible display guides drivers with instructive messages and can be used to display custom advertisement or greetings for drivers.

#### Software Application Services

Set pricing and collect fees, provide 24/7 driver assistance, control access, display advertisements, track usage, and diagnose the station remotely using the growing suite of ChargePoint Network on-demand software applications and a web browser.

#### Smart Card Reader Option

Provide optional driver billing and custom access control, preventing electricity theft and enhancing safety, with an integrated standards-based RFID reader that accepts ChargePass cards

#### Intelligent Power Control

Ensure power is delivered only when a driver is authorized and the EV cord is properly inserted.

#### Vacuum Florescent Display with Multiple Language Support

Display instructive, advertisement, and greeting messages in many languages on the bright, easy-to-read display.

#### Integrated Fault Detection

- Ground Fault Detection: Integrated hardware ground-fault detection circuitry with auto retry and driver notification.
- Over-Current Detection: Disconnects power to prevent nuisance breaker trips at service panel. Auto retry and driver notification.
- Plug-Out Detection: Algorithm disengages power and notifies the driver when a plug is removed.

#### **Over-the-Air Station Upgrade**

Keep charging station current with future and evolving EV needs by upgrading station firmware remotely over-the-air.

#### Utility Grade Energy Meter

Provide accurate bi-directional energy measurement with integrated power metering circuitry.

#### Remote Diagnostics and Control

Minimize the need for on-site maintenance with real-time remote alarm monitoring and control.

#### Network Interface

Wireless and cellular network interfaces allow seamless integration with the ChargePoint Network and ChargePoint Network application services.

#### Smart Grid Compatible

Enable Time-Of-Use (TOU) pricing and demand response by integrating with Advanced Metering Infrastructures (AMIs).



Coulomb Technologies, Inc. 1692 Dell Ave. Campbell, CA 95008-6901 USA US toll free: +1-877-370-3802 www.coulombtech.com www.mychargepoint.net

(VL)<sub>US</sub> Listed by Underwriters Laboratories Inc.

P/N: 73-001001-01 Rev 2



**Mechanical Drawings CT500** WALL MOUNT (CT503) 4 in 101.6 mm 4.8 in 121.4 mm DIMENSIONS 肋 Þ T 22 in 558.8 mm 17.2 in 436 mm = 12.1 in 306.3 mm 22.1 in 560.3 mm 33.2 in 842.5 mm WALL MOUNT (CT503) 16 in 406.4 mm MOUNTING DIMENSIONS = [ 0 4.5 in 114 mm time ( 0 0 0 l٥ Ŧ (4X) .25 IN DIA LAG SCREW 6 MM DIA LAG SCREW Listed by Underwriters Laboratories Inc. CUL



**Specifications** 

**CT500** 

| Input Power                    | 7.2 kW  |
|--------------------------------|---|
| Input Voltage                  | 208/240 VAC   |
| Input Current                  | 30 A  |
| Input Power Connections        | Line 1, Line 2, Earth   |
| Required Service Panel Breaker | 40 A double pole breaker (non-GFCI type) on dedicated circuit |
| Standby Power                  | 5 W typical   |
| Electrical Output              |   |
| Electrical Output              |   |
| Output Charging Power          | 7.2 kW  |
| Output Voltage                 | 208/240 VAC   |
| Output Current                 | 30 A  |
| Output Charging Connector      | SAE J1772™ EV connector on 18' (5.48 m) cable                 |
|                                |   |
| Functional Interfaces          |   |
| Card Reader                    | ISO 15693, 14443  |
| Ground Fault Detection         | 20 mA CCID with auto retry (15 minute delay, 3 tries)         |
| Plug-Out Detection             | Power terminated per SAE J1772 <sup>™</sup> specification     |
| Power Measurement              | 2% @ 15 minute intervals                                      |
| Local Area Network             | 2.4 GHz 802.15.4 dynamic network                              |
| Wide Area Network              | Commercial CDMA or GPRS cellular data network                 |

#### Safety and Operational Ratings

| Safety Compliance                                  | UL Listed for USA and cUL certified for Canada; Complies with UL 2594, UL 2231-1, UL 2231-2, UL 1998, UL 991, NEC Article 625 |
|--|---|
| Surge Protection                                   | $6\ kV @ 3,000\ A.$ In geographic areas subject to frequent thunderstorms, supplemental surge protection is recommended.      |
| EMC  | FCC Part 15 Class B   |
| Operating Temperature                              | -22°F to 122°F (-30°C to +50°C)   |
| Operating Humidity                                 | 95% non-condensing  |
| Enclosure  | NEMA 3R   |
| Terminal Block Temperature Rating                  | 212° F (100°C)  |
| Maximum Charging Stations per 802.15.4 Radio Group | 24. Each station must be within 150 feet "line of sight" of one gateway station.  |
| Approximate Shipping Weights                       | 26 lbs (12 kg)  |

Coulomb Technologies, Inc. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.





Ordering Information

**CT500** 



#### **Ordering Information**

Specify model number followed by the applicable  $\mathsf{code}(s)$ . The order code sequence is:

Model-Modem-SIM-Local Area Network-Warranty

| Option  | Order Code    |
|---|---------------|
| Model   |               |
| Wall Mount  | CT503         |
| Modem*  |               |
| Integral CDMA ChargePoint<br>Gateway Modem                            | -CDMA         |
| Integral GPRS ChargePoint<br>Gateway Modem                            | -GPRS         |
| SIM   |               |
| USA GPRS SIM  | -SIM1         |
| Canada GPRS SIM   | -SIM2         |
| Card Reader   |               |
| RFID Card Reader  | -RFID         |
| Local Area Network (LAN)*   |               |
| 802.15.4 wireless interface   | -ZIG          |
| Warranty  |               |
| 5 Year Parts Only Extended Warranty:<br>Gateway                       | -EW5GW        |
| 5 Year Parts Only Extended Warranty:<br>Gateway, LAN, and Card Reader | -EW5GWRFIDZIG |
| 5 Year Parts Only Extended Warranty:<br>Card Reader and LAN           | -EW5RFIDZIG   |

#### Order Code Examples

| If ordering this   | The order code would be   |
|--|---------------------------|
| Wall Mount with CDMA<br>Gateway Modem, RFID Card<br>Reader, and LAN        | CT503-CDMA-RFID-ZIG       |
| Wall Mount with GPRS Gateway<br>Modem, and USA GPRS SIM                    | CT503-GPRS-SIM1           |
| Wall Mount with Card Reader,<br>LAN, and 5 year extended<br>parts warranty | CT503-RFID-ZIG-EW5RFIDZIG |

For pricing and additional product information, contact the distributor in your area. For a complete list of distributors, go to www.coulombtech.com and click Purchase.

\*Specify at least one modem or LAN option (or both)

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# CT2020 Family

ChargePoint Networked Charging Stations

ChargePoint<sup>®</sup> charging stations offer municipalities, corporations, fleets, and utilities highly reliable electric vehicle charging that drivers prefer. The easy-to-use stations provide multiple power options, integrating aesthetics, and ergonomics with sturdy construction—ideal for residential, commercial, and outdoor public applications.

The CT2020 dual charging stations provide two 7.2 kW (208/240 V @ 30 A) Level 2 charging ports and are designed for public outdoor applications for the North American marketplace. Charging is delivered via standard SAE J1772<sup>™</sup> connectors attached to self-retracting<sup>1</sup> cords.

To enhance safety and eliminate energy theft, drivers access and energize the station using a ChargePoint card or contactless credit card. The station's highly visible display guides drivers with instructive messages and can be used to display targeted messages for drivers.

#### Software Application Services

Set pricing and collect fees, provide 24x7 driver assistance, control access, enable reservations, display advertisements, track usage and monitor the station remotely using the growing suite of ChargePoint cloud-based service plans.

#### Utility Light<sup>1</sup>

Provide drivers with the visibility they need to start and stop charging sessions in areas with poor lighting conditions, with an energy-efficient, photosensor-activated light.

#### Hassle-Free Cord Management<sup>1</sup>

Eliminate the need for drivers to coil up the SAE J1772 cord with the CT2025's self-retracting cord management system, ensuring that the cord is always off the ground when not in use.

#### Smart Card Reader

Provide optional driver billing and custom access control, preventing electricity theft and enhancing safety, with an integrated standards-based RFID reader that accepts ChargePoint cards, contactless credit cards and MIFARE-based transportation cards.

#### Intelligent Power Control

Ensure power is delivered only when a driver is authorized and the EV connector is properly inserted.

# Vacuum Florescent Display with Multiple Language Support

Display instructions and messages in many languages on the bright, easy-to-read display.

#### **Integrated Fault Detection**

- Ground Fault Detection: Integrated ground-fault detection circuitry with auto retry and driver notification.
- Over-Current Detection: Disconnects power to prevent nuisance breaker trips at service panel. Auto retry and driver notification.
- Plug-Out Detection: Algorithm disengages power and notifies the driver when a plug is removed.

#### **Over-the-Air Station Upgrade**

Keep charging stations current with evolving EV needs by upgrading station firmware remotely over-the-air.

#### Utility Grade Energy Meter

Provide accurate bi-directional energy measurement with integrated power metering circuitry.

#### **Remote Diagnostics and Control**

Minimize the need for on-site maintenance with remote, real-time alarm monitoring and control.

#### Network Interface

Wireless and cellular network interfaces allow seamless integration with ChargePoint cloud-based application services.

#### Smart Grid Compatible

Enable Time-Of-Use (TOU) pricing and demand response by integrating with Advanced Metering Infrastructures (AMIs).

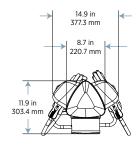


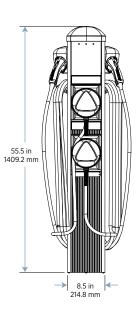
CT2021 charging station

1 Included on the CT2025 only

ChargePoint CT2020 Family

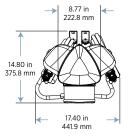
## CT2021 Bollard

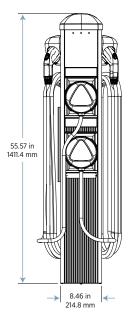






## CT2023 Wall Mount







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## **CT2020 Family Specifications**

## **Electrical Input**

| Input Power                    | 7.2 kW (x 2)  |
|--------------------------------|---|
| Input Voltage                  | 208/240 VAC   |
| Input Current                  | 30 A (x 2)  |
| Input Power Connections        | Line A1, Line A2, Earth, Line B1, Line B2 (two independent 40 A branch circuits, each providing Line 1 and Line 2, and a single protective Earth conductor) |
| Required Service Panel Breaker | 40 A double pole breaker (non-GFCI type) on dedicated circuit (x 2)   |
| Standby Power                  | 7 W typical (not including LED light fixture)   |

## **Electrical Output**

| Output Charging Power     | 7.2 kW (x 2)  |
|---------------------------|---|
| Output Voltage            | 240 VAC (x 2)   |
| Output Current            | 30 A (x 2)  |
| Output Charging Connector | SAE J1772 EV Connector on 18' (5.48 m) cord (x 2). On CT2025 only, cord is self-retracting. |

## **Functional Interfaces**

| Photosensor-activated 9 W LED light (equivalent to 50 W incandescent) |
|---|
| ISO 15693, 14443  |
| 20 mA CCID with auto retry (15 minute delay, 3 tries)                 |
| Power terminated per SAE J1772 specification                          |
| 2% @ 15 minute intervals  |
| 2.4 GHz 802.15.4 dynamic network                                      |
| Commercial GPRS or CDMA cellular data network                         |
|   |

## Safety and Operational Ratings

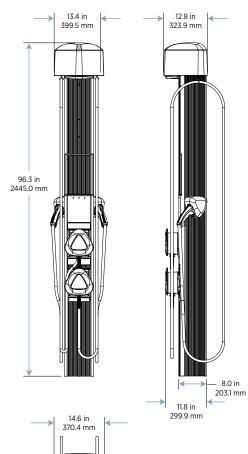
| Safety Compliance                                     | UL Listed for USA and cUL certified for Canada; Complies with UL 2594, vUL 2231-1, UL 2231-2, UL 1998, UL 991, NEC Article 625 |
|---|--|
| Surge Protection                                      | 6 kV @ 3,000. In geographic areas subject to frequent thunderstorms,<br>supplemental surge protection is recommended.          |
| EMC Compliance  | FCC Part 15 Class A  |
| Operating Temperature                                 | -22°F to 122°F (-30°C to +50°C)  |
| Operating Humidity                                    | 95% non-condensing   |
| Enclosure   | Type 3R  |
| Terminal Block Temperature<br>Rating                  | 100°C (212° F)   |
| Maximum Charging Stations<br>per 802.15.4 Radio Group | 24. Each station must be within 150 feet "line of sight" of one gateway station.   |
| Wind Loading  | Up to 150 mph (241 kph). On the CT2025, includes a 12" x 18" (30 cm x 46 cm) additional signage area.                          |
| Approximate Shipping Weights                          | CT2021: 45 lbs (20.4 kg)<br>CT2023 45 lbs (20.4 kg)<br>CT2025: 98 lbs (44.5 kg)  |

Included on the CT2025 only. ChargePoint, Inc. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

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ChargePoint CT2020 Family

## **CT2025 Bollard with Cable** Management



## **Ordering Information**

Specify model number followed by the applicable code(s). The order code sequence is:

#### Model-Modem-SIM-Card Reader-Warranty

| Option      |   | Order Code       |
|-------------|---|------------------|
| Model       | Standard Bollard Mount<br>Wall Mount                | CT2021<br>CT2023 |
|             | Bollard Mount with Top Lamp and Cable<br>Retractors | CT2025           |
| Modem       | Integral GPRS ChargePoint Gateway<br>Modem          | -GPRS            |
|             | Integral CDMA ChargePoint Gateway<br>Modem          | -CDMA            |
| SIM         | USA GPRS SIM  | -SIM1            |
|             | Canada GPRS SIM                                     | -SIM2            |
| Card Reader | Contactless Credit Card Reader -CCR                 |                  |
| Warranty    | 5 Year Parts Only Extended Warranty                 | -EW5             |
|             | 5 Year Parts Only Extended Warranty<br>– Gateway    | -EW5GW           |

### **Ordering Code Examples**

| If ordering this  | the ordering code would be |
|---|----------------------------|
| Standard Bollard Mount with GPRS Modem  | CT2021-GPRS                |
| Bollard Mount with Top Lamp and<br>Cable Retractors, GPRS Mode,<br>Canada GPRS SIM                    | CT2025-GPRS-SIM2           |
| Standard Bollard Mount with USA<br>GPRS Modem, Contactless Credit<br>Card Reader, and 5 Year Warranty | CT2021-GPRS-SIM1-CCR-EW5GW |

## For More Information

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ChargePoint, Inc.

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# ChargePoint<sup>®</sup> CPF25 Level 2 Charging Stations

Specifications and Ordering Information

## **Ordering Information**

Specify by order code(s).

| Description |  | Order Code             |
|-------------|--|------------------------|
| Model       | Single Wall Mount, 5.4 m (18') Cord  | CPF25-L18              |
|             | Single Pedestal Mount, 5.4 m (18') Cord  | CPF25-L18-PD           |
|             | Two Stations with Dual Pedestal Mount,<br>5.4 m (18') Cord                         | CPF25-L18-PD-Dual      |
|             | Single Wall Mount, 5.4 m (18') Cord<br>and Cord Management Kit                     | CPF25-L18-CMK6         |
|             | Single Pedestal Mount, 5.4 m (18') Cord<br>and Cord Management Kit                 | CPF25-L18-CMK6-PD      |
|             | Two Stations with Dual Pedestal Mount,<br>5.4 m (18') Cord and Cord Management Kit | CPF25-L18-CMK6-PD-Dual |
|             | Single Wall Mount, 7.0 m (23') Cord  | CPF25-L23              |
| 1           | Single Pedestal Mount, 7.0 m (23') Cord  | CPF25-L23-PD           |
|             | Two Stations with Dual Pedestal Mount,<br>7.0 m (23') Cord                         | CPF25-L23-PD-Dual      |
|             | Single Wall Mount, 7.0 m (23') Cord<br>and Cord Management Kit                     | CPF25-L23-CMK8         |
|             | Single Pedestal Mount, 7.0 m (23') Cord<br>and Cord Management Kit                 | CPF25-L23-CMK8-PD      |
|             | Two Stations with Dual Pedestal Mount,<br>7.0 m (23') Cord and Cord Management Kit | CPF25-L23-CMK8-PD-Dual |
| Replacement | 5.4 m (18'), 32 A Charging Cord  | CPF25CORD-L18-F        |
| Cord        | 7.0 m (23'), 32 A Charging Cord  | CPF25CORD-L23-F        |



Energy ENERGY STAR

The First ENERGY STAR® Certified EV Charger ChargePoint CPF25 Two Stations with Dual Pedestal Mount and Cord Management Kit

ChargePoint CPF25 Family

## Ordering Information (continued)

#### **Required Companion Products**

| Description  | Order Code |
|--|------------|
| ChargePoint Gateway USA*<br>(1 required for every 9 stations)    | CPGW1      |
| ChargePoint Gateway Canada*<br>(1 required for every 9 stations) | CPGW2      |

Provides cellular connectivity only to ChargePoint CPF25 stations. ChargePoint certified installers will do a site validation and order the ChargePoint Gateway as needed. As part of the make-ready, the site host needs to provide a location within 46 m (1507) line of sight of the ChargePoint stations with adequate cellular coverage. In addition, the site host is responsible for providing power to the gateway. The ChargePoint Gateway is owned and maintained by ChargePoint.

### **Companion Products for Fleet Applications**

For fleet applications, CPF25 stations require the purchase of the Fleet Plan cloud service.

| Description                                      | Order Code                  |
|--|-----------------------------|
| Fleet Plan<br>(1, 2, 3, 4 or 5 years) (required) | CPCLD-FLEET-n <sup>1</sup>  |
| Station Initial Activation (recommended)         | CPSUPPORT-ACTIVE            |
| ChargePoint Assure (recommended)                 | CPF25-ASSURE-n <sup>2</sup> |

Comes with 1 year of ChargePoint Assure coverage at no charge for qualified installations. Other conditions apply.

<sup>1</sup>Substitute *n* for desired years of service (1, 2, 3, 4 or 5 years) <sup>2</sup>Substitute *n* for the duration of additional coverage (1, 2, 3 or 4 years)

### **Companion Products for Multi-Family Applications**

For multi-family applications, CPF25 stations may only be purchased for use in properties that have signed the ChargePoint Electric Vehicle Charging Services Agreement.

| Description                        | Order Code    |
|------------------------------------|---------------|
| Site Initial Activation (required) | CPMFHS-ACTIVE |

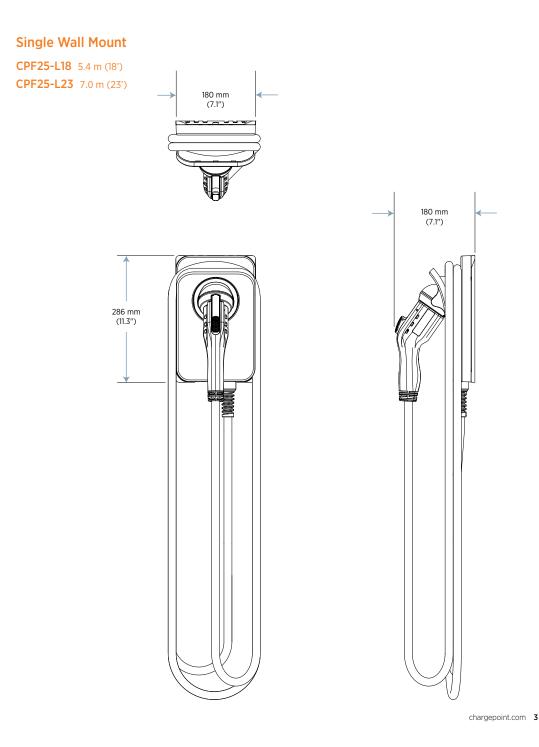
Includes a 3 year parts exchange warranty ('Parts Warranty'). Additionally, for as long as the resident subscribes to Multi-Family Home Service Plan, ChargePoint will provide on-site labor to maintain the stations ('Maintenance Service'). The maintenance service does not provide coverage for abuse, vandalism, damage or other problems caused by accidents or negligence.



ChargePoint CPF25 Single Wall Mount

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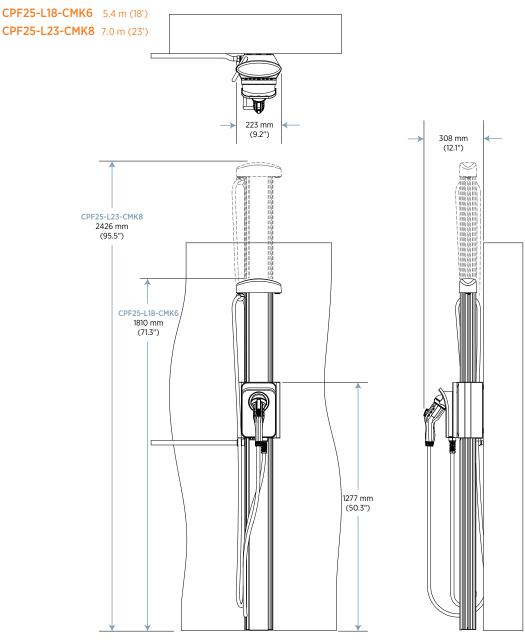
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ChargePoint CPF25 Family

## Single Wall Mount with Cord Management Kit



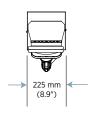
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## **Single Pedestal Mount**

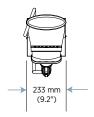
 CPF25-L18-PD
 5.4 m (18')

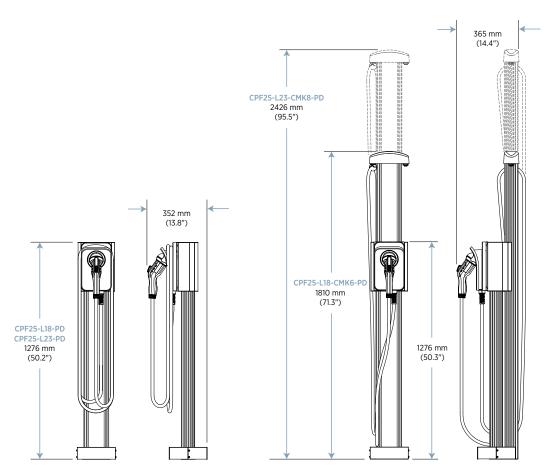
 CPF25-L23-PD
 7.0 m (23')



## Single Pedestal Mount with Cord Management Kit

CPF25-L18-CMK6-PD 5.4 m (18') CPF25-L23-CMK8-PD 7.0 m (23')





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ChargePoint CPF25 Family

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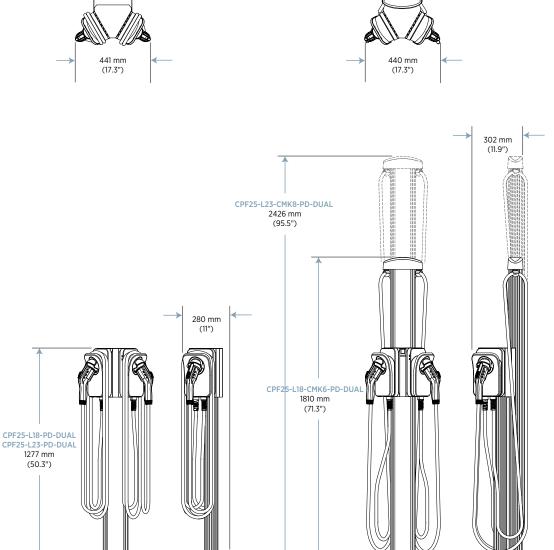
## **Two Stations with Dual Pedestal Mount**

**CPF25-L18-PD-DUAL** 5.4 m (18') **CPF25-L23-PD-DUAL** 7.0 m (23')

# 441 mm (17.3")

## **Two Stations with Dual Pedestal Mount** and Cord Management Kit

**CPF25-L18-CMK6-PD-DUAL** 5.4 m (18') CPF25-L23-CMK8-PD-DUAL 7.0 m (23')



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## **Specifications**

|                      | One Station (AC Voltage 208 / 240 V AC)                                   |                            |                                   | Two Stations (AC Voltage 208 / 240 V AC) |  |                                       |
|----------------------|---|----------------------------|-----------------------------------|--|--|---------------------------------------|
| Electrical Input     | Input<br>Current  | Input Power<br>Connection  | Required Service<br>Panel Breaker | Input<br>Current                         | Input Power<br>Connection                  | Required Service<br>Panel Breaker     |
| Standard             | 32 A  | One 40 A branch<br>circuit | 40 A dual pole<br>(non-GFCl type) | 32 A X 2                                 | Two independent<br>40 A branch<br>circuits | 40 A dual pole<br>(non-GFCI type) x 2 |
| Standard Power Share | n/a   | n/a                        | n/a                               | 32 A                                     | One 40 A branch circuit                    | 40 A dual pole<br>(non-GFCI type)     |
| Power Select 16 A    | 16 A  | One 20 A branch<br>circuit | 20 A dual pole<br>(non-GFCI type) | 16 A x 2                                 | Two independent<br>20 A branch<br>circuits | 20 A dual pole<br>(non-GFCl type) x 2 |
| Service Panel GFCI   | Do not provide external GFCI as it may conflict with internal GFCI (CCID) |                            |                                   |  |  |                                       |
| Wiring – Standard    | 3 Wire – L1, L2 plus Earth (no neutral) 5-wire (L1, L1, L2, L2, Ea        |                            |                                   | L2, Earth)                               |  |                                       |
| Wiring – Power Share | n/a   |                            |                                   | 3-wire (L1, L2,                          | Earth)                                     |                                       |
| Station Power        | 2.5 W typical (standby), 4 W maximum (operation)                          |                            | 5 W typic                         | cal (standby), 8 W m                     | naximum (operation)                        |                                       |

## **Electrical Output**

| Standard              | 7.7 kW (240 V AC @ 32 A) |
|-----------------------|--------------------------|
|                       |                          |
| Functional Interfaces |                          |
| Connector Type        | SAE J1772™               |

| Cable Length – 1.8 m (6') Cable Management | 5.4 m (18')             |
|--|-------------------------|
| Cable Length – 2.4 m (8') Cable Management | 7.0 m (23')             |
| Overhead Cable Management System           | Yes                     |
| Card Reader                                | ISO 15693 and ISO 14443 |

## Safety and Connectivity Features

| Ground Fault Detection       | 20 mA CCID with auto retry  |
|------------------------------|---|
| Open Safety Ground Detection | Continuously monitors presence of safety (green wire) ground connection |
| Plug-Out Detection           | Power terminated per SAE J1772™ specifications                          |
| Power Measurement Accuracy   | +/- 2% from 2% to full scale (32 A)                                     |
| Power Report/Store Interval  | 15 minute, aligned to hour  |
| Local Area Network           | 2.4/5 GHz Wi-Fi (802.11 a/b/g/n)  |
| Wide Area Network            | 3G GSM, 3G CDMA provided by the ChargePoint Gateway CPGWx               |

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ChargePoint CPF25 Family

## Safety and Operational Ratings

| Enclosure Ratings                                | Type 3R per UL 50E   |  |
|--|--|--|
| Safety and Compliance                            | UL and C-UL listed product per UL2594, UL2231-1, UL2231-2. NEC Article 625 compliant<br>UL and C-UL listed per UL916 Energy Management Equipment |  |
| Surge Protection                                 | 6 kV @ 3000 A. In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended.        |  |
| EMC Compliance                                   | FCC Part 15 Class B  |  |
| Storage Temperature                              | -40°C to +60°C (-40°F to 140°F)  |  |
| Operating Temperature                            | -30°C to +50°C (-22°F to 122°F)  |  |
| Operating Humidity                               | Up to 85% @ +50°C (122°F) non-condensing   |  |
| Non-Operating Humidity                           | Up to 95% @ +50°C (122°F) non-condensing   |  |
| Maximum Charging Stations per 802.11 Radio Group | 9 maximum. Each station must be located within 46 m (150') "line of sight" of a CPGWx gateway.   |  |

#### Indicators

| WiFi LED               | Yes |
|------------------------|-----|
| Fault Indicator per UL | Yes |
| Status LED             | Yes |

ChargePoint, Inc. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

## **Contact Us**

To order your ChargePoint CPF25 charging station:

- Nisit chargepoint.com/sales
- Call +1.408.705.1992
- Email sales@chargepoint.com

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- 4. Please refer to paragraphs 18 19 of the Petition for the following questions.
  - a. Please provide the details of "Tampa Electric's research" including, but not limited to, its procedure, sources of data/information, and its final report.
  - b. Please explain in detail why a 10-year, rather than a 15-year, ASL is "more appropriate" for the petitioned Account 370.10 EV charging station.
  - c. Please provide all reports and studies that support a 10 percent depreciation rate for TECO's EV charging ports and stations (for both Pilot and non-Pilot related plant).
- A. a. Please see Tampa Electric's responses to Data Requests Nos 1(a), 2(b) and 3(e) above.
  - b. Tampa Electric determined that the average 10-year average service life was more appropriate given the guidance received from NovaCharge, LLC, indicating the minimum design life of the assets will be 7 years. The range of possibilities was of a minimum of 7 and 15 years compared with other Florida utilities.
  - c. Tampa Electric does not have reports and studies that support the 10 percent depreciation rate. The 10-year average service life was the basis for the 10 percent depreciation rate.

- **5.** Assuming TECO's Petition is approved, please identify the following of Account 370.10 as of December 31, 2023:
  - a. total plant amount of the account;
  - b. percentage of the plant associated with the Pilot-related EV charging ports on customer premises;
  - c. percentage of the plant associated with the company-owned Pilot-related EV charging stations; and
  - d. percentage of the plant associated with the company-owned non-Pilot-related EV charging stations.
- A. a. As of September 30, 2023, all existing EV charging ports were placed inservice to subaccount 394.00 Tool Shop & Garage Equip. The total plant amount for both Pilot-related Customer Premise and non-Pilot Company Use is \$663,191 and \$398,747, respectively.
  - b. The percentage of plant associated with the Pilot-related Customer Premise is 62.5 percent.
  - c. The percentage of plant associated with Pilot-related Company Use is 0.0 percent.
  - d. The percentage of plant associated with Non-Pilot Company Use is 37.5 percent.

- 6. What is TECO's proposed implementation date for the petitioned new depreciation subaccount and the depreciation rate, if approved, and why?
- A. Tampa Electric would like the implementation of the 10 percent depreciation rate to be effective October 1, 2023 as the Pilot-related EV Charging station was placed inservice on September, 2023. If authorized, Tampa Electric would perform the necessary asset cost transfers and related reserve transfers from the currently used subaccount 394.00 Tool Shop & Garage Equipment.

- 7. Please describe the charging system standard(s) used by TECO's EV charging ports and stations, and comment on how the expected ASL of these EV charging devices is impacted, if at all, assuming these devices were based on an alternative widely available and adopted charging system standard.
- A. The charging system standards used by Tampa Electric's EV charging ports and stations include various UL and FCC certifications for electrical and communications components respectfully, SAE J-1772 Type 1 Connectors, Open Charge Point Protocol standards, and Open Automated Demand Response capabilities. Tampa Electric has no information to indicate the expected ASL of these EV charging devices would be impacted by adopting alternate widely available charging system standards.

- 8. Please respond to the following questions by referring to Order No. PSC-2021-0144-PAA-EI (Order), a copy of which is appended hereto as Attachment A.
  - a. Please confirm that all of the 200 Pilot-related EV charging ports have been or will be "at commercial/industrial customer locations," as set forth in the first paragraph of the Order. If not, please explain the reasons.
  - b. Please confirm that out of the 200 Pilot-related EV charging ports, 4 of them are DCFC and the rest are Level 2, as set forth in the third full paragraph on page 2 of the Order. If not, please explain the reasons.
  - c. Is the market segment of the 200 Pilot-related EV charging ports that TECO has deployed and/or will install the same as what are specified on page 3 of the Order? If not, please explain the reasons.
  - d. Please identify the Pilot's commencing date if it is not April 1, 2021.
  - e. Please identify the actual and estimated costs of the Pilot, and explain the amounts that are different from the estimated costs listed on page 5 of the Order.
  - f. Please provide a copy of all of TECO's Pilot-related annual reports which are prescribed on pages 5 6 of the Order.
  - g. Please provide the Pilot-related annual capital expenditures and O&M expenses in comparison with what are prescribed on page 6 of the Order.
- **A.** a. Yes, all of the installed EV charging ports are at Commercial & Industrial customer locations. Any future EV charging port installations will be at Commercial & Industrial customer locations.
  - b. Tampa Electric is installing Level 2 charging ports for all of the 200 EV charging ports, across the five approved market segments. Additionally, the company expects to install four DC Fast Chargers (DCFC) and two Level 2 charge ports at each DCFC location. These additional Level 2 ports at the DCFC locations (total of eight) are referenced in the Order No. PSC-2021-0144-PAA-EI.
  - c. Yes. The market segments are the same as specified on Page 3 of the Order.
  - d. Tampa Electric recognizes the commencing date of the pilot is April 21, 2021.

e. The table below summarizes the estimated and actual cost per port based on completed installations by market segment.

| Market Segment       | Estimated Cost | Actual Average Cost        |
|----------------------|----------------|----------------------------|
| Workplace            | \$7,143        | \$7,481                    |
| Public/Retail        | \$7,143        | \$6,896                    |
| Government           | \$13,750       | \$15,961                   |
| Multi-unit Dwellings | \$7,500        | No installations completed |
| Income Qualified     | \$13,750       | No installations completed |
| DC Fast Chargers     | \$18,750       | No installations completed |

The variance between estimated and actual installation costs is due to higher costs associated with products and services than when the Pilot was approved. The total number of ports projected to be installed within each market segment has not been reached, resulting in a greater average per port cost. Tampa Electric expects that the actual installed costs will continue to fluctuate until all installations are complete. As a result, the actual installation cost per port could be higher or lower than originally estimated based on the timing of each installation and market conditions at that time.

- f. A copy of each annual report is attached.
- g. Please see the table below for the annual capital expenditures through December 2022 as prescribed in page 6 of the Order. There were not any Pilot-related O&M expenses through December of 2022.

| Capital Expense | O&M Expense |
|-----------------|-------------|
| \$1,037,863.85  | N/A         |

# AUSLEY & MCMULLEN

ATTORNEYS AND COUNSELORS AT LAW

123 SOUTH CALHOUN STREET P.O. BOX 391 (ZIP 32302) TALLAHASSEE, FLORIDA 32301 (850) 224-9115 FAX (850) 222-7560

May 18, 2022

## VIA: ELECTRONIC MAIL

Mr. Adam J. Teitzman Commission Clerk Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee, Florida 32399-0850

> Re: EV Charger Annual Status Report Dkt. 20200220-EI

Dear Mr. Teitzman:

Enclosed for filing is Tampa Electric Company's 2021 EV Charging Pilot Program, Annual Status Report.

Thank you for your assistance in connection with this matter.

Sincerely,

Malcolm N. Means

MNM/bmp Enclosure cc: All parties of record (w/encl.)

#### BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Tampa Electric Company ) for Approval of Electric Vehicle Charging ) Pilot Program ) DOCKET NO. 20200220-EI

FILED: May 18, 2022

#### TAMPA ELECTRIC COMPANY'S FIRST ANNUAL REPORT ELECTRIC VEHICLE CHARGING PILOT PROGRAM

Tampa Electric Company ("Tampa Electric" or "the company"), files this First Annual Report for its Electric Vehicle Charging Pilot Program and says:

## I. BACKGROUND

1. On September 25, 2020, Tampa Electric submitted a petition seeking Florida Public Service Commission ("Commission") approval of an electric vehicle charging pilot program ("Pilot"). Under this Pilot, Tampa Electric proposed to purchase, install, own, and maintain approximately 200 electric vehicle charging ports within the company's service territory.

2. The company proposed to deploy the charging ports at Tampa Electric customer locations in five different market segments: (1) workplaces; (2) public/retail; (3) multi-unit dwellings; (4) income qualified; and (5) government. These customer locations, known as "Site Hosts," would provide a site for the charging ports. Tampa Electric will pay up to \$5,000 per Level 2 port towards the cost of installation for workplaces, public/retail, and multi-unit dwellings, and the full cost of installation for income qualified sites and government locations.

3. Site Hosts are billed for electricity consumed by the charging ports at the appropriate tariff rate. Site Hosts have the choice of providing charging as a free amenity to visitors, or charging a per kWh fee equal to Tampa Electric's General Service rate, plus any applicable network or transaction fees.

4. On April 21, 2021, the Commission entered Order No. PSC-2021-0144-PAA-EI ("April 21<sup>st</sup> Order") in the above-captioned docket. The April 21<sup>st</sup> Order approved the Pilot for a four-year term and capped the company's capital investment in the program at \$2 million for the life of the program.

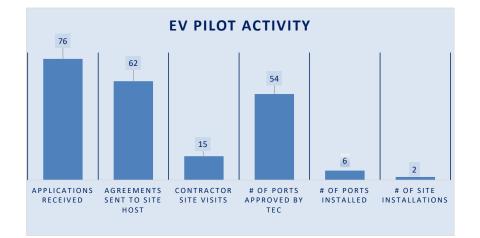
 On May 18, 2021, the Commission entered Order No. PSC-2021-0175-CO-EI, which made the April 21<sup>st</sup> Order final and effective.

6. Pursuant to the April 21<sup>st</sup> Order, Tampa Electric is required to submit annual reports regarding the status of the Pilot containing "[c]omprehensive data for each market segment, including but not limited to the number of charging sessions, time of use, charger utilization by geographic location, costs to EV drivers, installation costs, load profiles, ongoing O&M expense, and Site Host or driver feedback." Tampa Electric accordingly provides this First Annual Report.

#### II. FIRST ANNUAL REPORT

7. Tampa Electric completed the first Pilot installation on March 31, 2022. Exhibit A to this First Annual Report shows two of the charging ports installed as part of the first Pilot installation at a university parking garage. Exhibit B includes images that represent the design elements of a typical installation under the Pilot.

8. The following table sets out the key data points for the Pilot through April 30, 2022.



9. Since the company has only completed two site installations at this time, the company does not yet have the comprehensive data enumerated in the April 21<sup>st</sup> Order approving the Pilot. Although comprehensive EV charging data is not yet available, Tampa Electric can provide valuable lessons learned thus far during the early deployment phase of the Pilot.

10. **Contractor On-Boarding.** While Tampa Electric currently has the required contractor and sub-contractors fully on-boarded for the deployment, there were challenges in reaching the current state. First, Tampa Electric's process for evaluating and approving sites for participation requires an on-site competitive bid process to ensure both Tampa Electric and the prospective Site Host are receiving competitive pricing for the EV charger installation. Before work can be awarded, the Site Host must first agree to any associated costs and execute the necessary participation agreement. As such, work is not guaranteed for the bidding contractors. Second, in alignment with Tampa Electric's ongoing focus on maintaining a strong safety culture, high minimum standards are required for all contractors performing work on the company's behalf. This includes utilization of a third-party to continuously monitor compliance and any required

documentation. The required bid process, the company's safety standards, and the current status of the labor market because of the COVID 19 pandemic, made it difficult to attract a larger pool of contractors to support a more competitive environment.

11. **Customer Engagement.** Several Tampa Electric business units are engaged in the process of informing potential site hosts about the program and helping them to navigate through the process of hosting EV charging equipment at their location. Those business units include corporate communications, commercial and industrial account teams, external affairs for government accounts, and new construction. The primary lesson learned from the customer engagements to date is the extended length of time required to move potential Site Hosts through the full cycle of introducing them to the program, completing the competitive bidding process for installation, executing the participation agreement, and ultimately installing EV chargers.

12. **Pilot Participant Recruitment.** While the participant on-boarding process can be lengthy, the primary point where potential site hosts may exit the process is when they are presented with their portion of the installation cost. As is the case currently with many products and services, material and labor costs associated with electrical work have increased significantly since Tampa Electric filed its petition in September 2020. Through information gathered from site visits completed to date, Tampa Electric estimates total costs for equipment installation will average approximately \$9,000 per port. Most potential Site Hosts have little or no experience with EV charging and therefore may be unprepared to absorb the associated costs, even after Tampa Electric's contribution of \$5,000 per port. Site Hosts who have previous experience with offering EV charging, on the other hand, seem to recognize the generous contribution made available through the Pilot. To help increase the overall pool of potential participants, customer outreach

efforts have been increased through the same business units previously mentioned in Section 11, and new Site Host applications continue to be submitted.

13. Although qualified contractor availability remains limited, and installation costs present an obstacle for participant recruitment, Tampa Electric continues working with interested customers in each of the identified market segment to achieve the goals set forth in the Pilot.

14. Tampa Electric will collect the information required for annual reports in this docket and will provide its next annual report by May 18, 2023.

DATED this 18th day of May, 2022.

Respectfully submitted,

Moliolon n. Means

J. JEFFRY WAHLEN jwahlen@ausley.com MALCOLM N. MEANS <u>mmeans@ausley.com</u> Ausley McMullen Post Office Box 391 Tallahassee, FL 32302 (850) 224-9115

ATTORNEYS FOR TAMPA ELECTRIC COMPANY

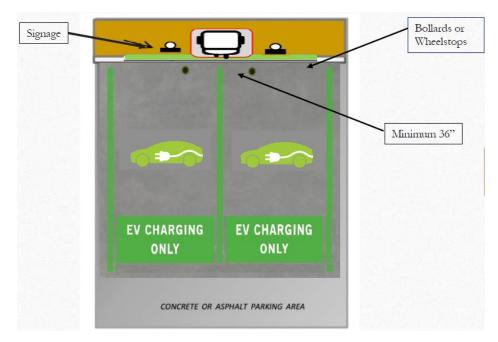
## Exhibit A

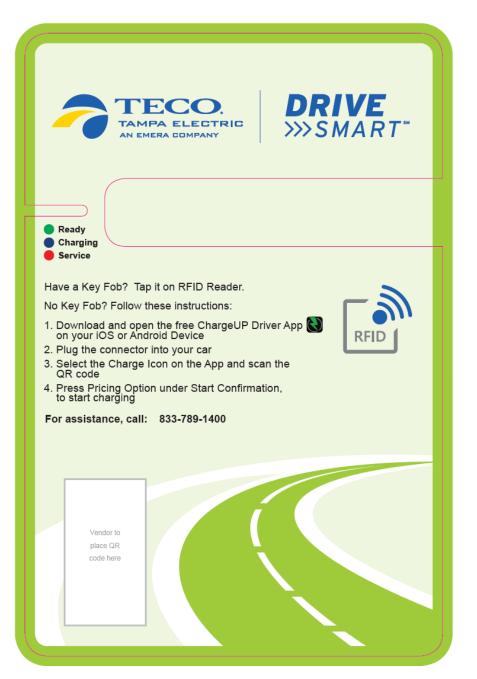
First Pilot Installation – University Parking Garage

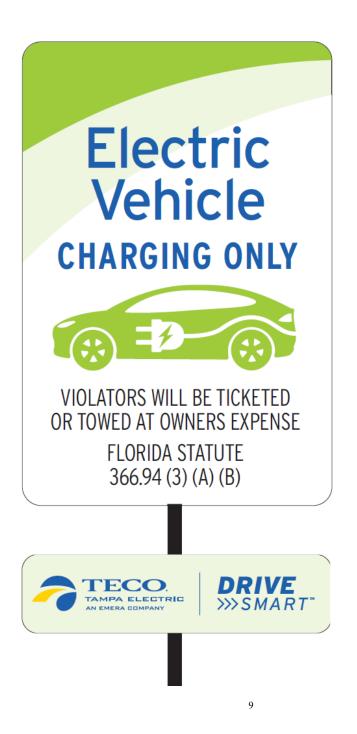


## Exhibit B

**Typical Pilot Installation Design Elements** 







#### **CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that a true and correct copy of the foregoing Status Report, filed on

behalf of Tampa Electric Company, has been furnished by electronic mail on this 18th day of May

2022 to the following:

Mr. Shaw Stiller Stefanie-Jo Osborn Office of the General Counsel Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee, FL 32399-0850 <u>sstiller@psc.state.fl.us</u> <u>sosborn@psc.state.fl.us</u>

Mr. Richard Gentry Ms. Patricia A. Christensen Office of Public Counsel 111 West Madison Street – Room 812 Tallahassee, FL 32399-1400 gentry.richard@leg.state.fl.us christensen.patty@leg.state.fl.us

Southern Alliance for Clean Energy George Cavros 120 E. Oakland Park Blvd. Fort Lauderdale, FL 33334 george@cavros-law.com ChargePoint Justin Wilson Justin.wilson@chargePoint.com

Greenlots Joshua Cohen jcohen@greenlots.com

Sierra Club Nathaniel Shoaff <u>Nathaniel.Shoaff@sierraclub.org</u>

Tesla, Inc. Kevin Auerbacher Patrick Bean Bill Ehrlich Noelani Derrickson <u>Kauerbacher@tesla.com</u> <u>Pbean@tesla.com</u> <u>Wehrlich@tesla.com</u> <u>nderrickson@tesla.com</u>

Walmart, Inc. Stephanie U. Eaton Derrick Price Williamson seaton@spilmanlaw.com dwilliamson@spilmanlaw.com

Mulilon n. Means

ATTORNEY

Attorneys and Counselors at Law 123 South Calhoun Street P.O. Box 391 32302 Tallahassee, FL 32301 P: (850) 224-9115 F: (850) 222-7560

ausley.com

# May 18, 2023

## VIA: ELECTRONIC MAIL

Mr. Adam J. Teitzman Commission Clerk Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee, Florida 32399-0850

> Re: EV Charger Annual Status Report Dkt. 20200220-EI

Dear Mr. Teitzman:

Enclosed for filing is Tampa Electric Company's 2022 EV Charging Pilot Program, Annual Status Report.

Thank you for your assistance in connection with this matter.

Sincerely,

Mililan Means

Malcolm N. Means

MNM/bml Enclosure cc: Shaw Stiller (<u>sstiller@psc.state.fl.us</u>) Jordan Williams TECO Regulatory

## BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Tampa Electric Company ) for Approval of Electric Vehicle Charging ) Pilot Program ) DOCKET NO. 20200220-EI

FILED: May 18, 2023

#### TAMPA ELECTRIC COMPANY'S SECOND ANNUAL REPORT ELECTRIC VEHICLE CHARGING PILOT PROGRAM

Tampa Electric Company ("Tampa Electric" or "the company"), files this Second Annual Report for its Electric Vehicle Charging Pilot Program and says:

## I. BACKGROUND

1. On September 25, 2020, Tampa Electric submitted a petition seeking Florida Public Service Commission ("Commission") approval of an electric vehicle charging pilot program ("Pilot"). Under this Pilot, Tampa Electric proposed to purchase, install, own, and maintain approximately 200 electric vehicle charging ports within the company's service territory.

2. The company proposed to deploy the charging ports at Tampa Electric customer locations in five different market segments: (1) workplaces; (2) public/retail; (3) multi-unit dwellings; (4) income qualified; and (5) government. These customer locations, known as "Site Hosts," would provide a site for the charging ports. Tampa Electric will pay up to \$5,000 per Level 2 port towards the cost of installation for workplaces, public/retail, and multi-unit dwellings, and the full cost of installation for income qualified sites and government locations.

3. Site Hosts are billed for electricity consumed by the charging ports at the appropriate tariff rate. Site Hosts have the choice of providing charging as a free amenity to visitors, or charging a per kWh fee equal to Tampa Electric's General Service rate, plus any applicable network or transaction fees.

4. On April 21, 2021, the Commission entered Order No. PSC-2021-0144-PAA-EI ("April 21<sup>st</sup> Order") in the above-captioned docket. The April 21<sup>st</sup> Order approved the Pilot for a four-year term and capped the company's capital investment in the program at \$2 million for the life of the program.

 On May 18, 2021, the Commission entered Order No. PSC-2021-0175-CO-EI, which made the April 21<sup>st</sup> Order final and effective.

6. Pursuant to the April 21<sup>st</sup> Order, Tampa Electric is required to submit annual reports regarding the status of the Pilot containing "[c]omprehensive data for each market segment, including but not limited to the number of charging sessions, time of use, charger utilization by geographic location, costs to EV drivers, installation costs, load profiles, ongoing O&M expense, and Site Host or driver feedback."

7. Tampa Electric filed its First Annual Report on May 18, 2022. *See* DN 03016-2022. In the First Annual Report, the company reported that it completed the first Pilot installations on March 31, 2022. Tampa Electric also reported that, as of April 30, 2022, the company had received 76 total site host applications and had approved installation of 54 ports.

#### II. SECOND ANNUAL REPORT

8. The following table sets out the key data points for the Pilot for the 38 charge ports

installed through April 30, 2023:

| Number of Applications Received             | 169 |
|---|-----|
| Total Number of Ports Applied For           | 638 |
| Agreements Provided to Site Host For Review | 146 |
| Executed Agreements Received from Site Host | 57  |
| Contractor Site Visits Completed            | 42  |
| Number of Installation Sites Completed      | 9   |
| Number of Sites Pending Installation        | 9   |
| Number of Ports Installed                   | 38  |
| Number of Ports Pending Installation        | 44  |

9. The Commission's Order approving this Pilot Program specified that the company's annual reports should include "comprehensive data for each market segment," including: (1) number of charging sessions; (2) time of use; (3) charger utilization by geographic location; (4) costs to EV drivers; (5) installation costs; (6) load profiles; (7) ongoing O&M expense; and (8) Site Host or driver feedback. *See* Order No. PSC-2021-0144-PAA-EI, at page 6.

10. The tables below provide categories (1), (2), (3), and (5) of data listed above for the38 charge ports installed to date:

| Drive Smart Pilot Program Data by County and Market Segment |                                   |                                      |   |                                   |   |  |
|---|-----------------------------------|--------------------------------------|---|-----------------------------------|---|--|
|   |                                   |                                      |   |                                   |   |  |
|   |                                   | Hillsborou                           | gh County                                     |                                   |   |  |
| Market Segment  | Total Numer of<br>Installed Ports | Total Number of<br>Charging Sessions | Average Charge<br>Session Duration<br>(HH:MM) | Average kWh per<br>charge session | Average Total<br>Installed Cost Per<br>Port |  |
| Workplaces  | 14                                | 464                                  | 4:12  | 20.48                             | \$ 4,943.85                                 |  |
| Public/Retail   | 22                                | 1617                                 | 2:50  | 13.99                             | \$ 6,496.98                                 |  |
| Multi-unit Dwellings  | 0                                 | 0                                    | N/A   | N/A                               | N/A   |  |
| Income Qualified  | 0                                 | 0                                    | N/A   | N/A                               | N/A   |  |
| Government  | 0                                 | 0                                    | N/A   | N/A                               | N/A   |  |
|   |                                   | Pinellas                             | County  |                                   |   |  |
| Market Segment  | Total Numer of<br>Installed Ports | Total Number of<br>Charging Sessions | Average Charge<br>Session Duration<br>(HH:MM) | Average kWh per<br>charge session | Average Total<br>Installed Cost Per<br>Port |  |
| Workplaces  | 0                                 | 0                                    | N/A   | N/A                               | N/A   |  |
| Public/Retail   | 0                                 | 0                                    | N/A   | N/A                               | N/A   |  |
| Multi-unit Dwellings  | 0                                 | 0                                    | N/A   | N/A                               | N/A   |  |
| Income Qualified  | 0                                 | 0                                    | N/A   | N/A                               | N/A   |  |
| Government  | 2                                 | 22                                   | 0:58  | 5.54                              | \$ 15,961.00                                |  |

11. Tampa Electric is working with the vendor to refine the reporting in Category (4),

or costs to EV drivers, however the following high-level data can be provided. There are currently four (4) participating sites that have opted to charge a driver fee, which include three (3) Public/Retail, or 16 ports, and one (1) Government, or two (2) ports. The cost to drivers across these locations has averaged \$0.89 per charging session.

12. The data in categories (6), (7), and (8) is unavailable at this time. Category (7), or ongoing O&M costs, is unavailable because all 38 ports were installed too recently to provide meaningful ongoing O&M expense data. Tampa Electric is working with the vendor to develop categories (6) and (8) - load profiles and feedback - and expects to provide that information in its next annual report.

#### Lessons Learned

13. In the First Annual Report, Tampa Electric identified valuable lessons learned in the areas of Contractor On-Boarding,Customer Enagement, and Pilot Participant Recruitment. The company accordingly provides additional updates in these areas below.

14. **Contractor On-Boarding.** While there has been some contractor turnover during the pilot deployment, Tampa Electric has maintained the contracted personnel necessary to fully implement the Pilot. In Tampa Electric's First Annual Report, the company noted two issues with contractor on-boarding. First, contractors are not guaranteed work even if they submit the most competitive bid because the Site Host must first execute the participation agreement and subsequently agree to cover any installation costs beyond Tampa Electric's allowable contribution. Second, Tampa Electric's high minimum safety standards made it difficult to attract a larger pool of contractors. These two challenges have been mitigated because contractors have effectively incorporated Tampa Electric's requirements into their daily operations. The third contractor challenge noted in the First Annual Report (labor market impacts because of COVID-19) has mostly subsided and the participating contractors remain prepared to address any such impacts.

15. **Customer Engagement.** Several Tampa Electric business units remain engaged in the process of informing potential site hosts about the program and helping them to navigate through the process of hosting EV charging equipment at their location. Those business units

include customer programs, corporate communications, commercial and industrial account teams, external affairs for government accounts, legal, new construction, and economic development. The primary lesson learned from the customer engagements continues to be the extended length of time required to move potential Site Hosts through the full cycle of introducing them to the program, completing the competitive bidding process for installation, executing the participation agreement, and ultimately installing EV chargers.

16. **Pilot Participant Recruitment.** While the participant on-boarding process can be lengthy, the primary point where potential site hosts may exit the process is when they are presented with their portion of the installation cost. As is the case currently with many products and services, material and labor costs associated with electrical work have increased significantly since Tampa Electric filed its petition in September 2020. Based on the 41 sites quoted to-date for installations, the total quoted cost for equipment installation is averaging approximately \$7,800 per port.<sup>1</sup> Most potential Site Hosts have little or no experience with EV charging and therefore may be unprepared to absorb the associated costs, even after Tampa Electric's contribution of \$5,000 per port. Site Hosts who have previous experience with offering EV charging, on the other hand, seem to recognize the generous contribution made available through the Pilot. While Tampa Electric continues to move potential Site Hosts through the process, the Pilot is currently fully subscribed based on the 169 applications received to-date, which represent 638 total ports requested by potential Site Hosts. Agreement reviews, site assessments, and quoting installations will continue until all ports required to satisfy the Pilot objectives have been installed.

17. Although installation costs continue to present an obstacle for participant recruitment, Tampa Electric continues working with interested customers in each of the identified

<sup>&</sup>lt;sup>1</sup> Note – this average cost per installation is for all site quotes developed and provided to potential site hosts. The average cost per installation figures reported under Paragraph 10, above, are for the ports actually installed to date.

market segment to achieve the goals set forth in the Pilot. The Workplace Charging and Public/Retail market segments have seen the greatest results in customer interest, as well as completed and pending installations. The Multi-unit Dwelling segment has had a lot of interest, however no customers have committed to installing chargers. Based on customer feedback thus far, the primary reasons for not participating have been cost and the Pilot's limitation on the number of ports per site. Regarding the latter, these properties are in need of long-term EV charging solutions that provide certainty for how access to EV charging can be scaled to meet the needs of their residents. Tampa Electric's Pilot seemingly does not provide the long-term solution they're looking for, although we remain engaged with multiple properties that may yield more favorable results than seen thus far. The Government segment has had a lot of interest, although the timeline to fully onboard these customers has been the longest for two primary reasons. First, these customers have presented mutlitple sites for initial consideration and narrowing the list has been a lengthy process. Second, the agreement review and execution process requires input from multiple customer stakeholders, including approval by the governing body (i.e., City Council or County Commission). Additionally, Tampa Electric has anticipated working with the same Government customer to fulfill at least a portion of the Income Qualified market segment. While those efforts continue, the challenges mentioned above are equally impactful.

18. Local permitting has also been a more lengthy process than first expected. While not all jurisdictions have the same requirements, several have started exploring ways to provide ADA accessible EV charging. With no universally recognized requirements for ADA accessible EV charging parking spaces, additional time has been required to navigate the permitting process and edit installation designs as may be required.

19. Included with this Report as **Exhibit A** and **Exhibit B** are images that represent a typical installation under the Pilot. **Exhibit C** is an image depecting the design to allow for ADA access.

20. Tampa Electric continues to strive to make EV Charging accessible to the public.

21. Tampa Electric will collect the information required for annual reports in this docket and will provide its next annual report by May 18, 2024.

DATED this 18th day of May, 2023.

Respectfully submitted,

Means D.

J. JEFFRY WAHLEN jwahlen@ausley.com MALCOLM N. MEANS <u>mmeans@ausley.com</u> VIRGINIA PONDER vponder@ausley.com Ausley McMullen Post Office Box 391 Tallahassee, FL 32302 (850) 224-9115

ATTORNEYS FOR TAMPA ELECTRIC COMPANY

Exhibit A

Installation completed at the University of South Florida main campus



# Exhibit B

# Installation completed at a commercial office building



# Exhibit C

## Example of design to allow for ADA access.

Example of design to allow for ADA access. An existing parking space is striped to prevent parking and charge ports are installed in this area at same elevation as vehicles.

