



## ChargePoint Networked Charging Stations CT2000 AND CT2100 FAMILIES

The CT2000 and CT2100 families of ChargePoint® Networked Charging Stations, manufactured by Coulomb Technologies, are the most advanced, feature-rich networked charging stations available in the North American market. Combined with the ChargePoint Network Operating System (CPNOS), the ChargePoint Networked Charging Stations complete a smart charging infrastructure for plug-in electric vehicles called the ChargePoint® Network.

ChargePoint Networked Charging Stations perform bi-directional energy metering via an embedded utility-grade electronic meter. The ability to precisely measure and report electricity use enables a sustainable, flexible business model that meets the needs of drivers, corporations, fleet operators, utility companies and municipalities. This revenue generating business model includes flexible driver payment methods like “free” charging, pay-per-use, by subscription, and by kWh (where allowed).

### Networked Charging Stations

In the ChargePoint® Network, each local group of charging stations automatically forms a robust self-healing Radio Frequency (RF) mesh network managed by a single gateway charging station—a version of the networked charging stations incorporating an embedded CDMA or GSM cellular modem. Coulomb offers two families of Level II charging stations:

- CT2000 family: Dedicated networked Level II (208/240V @ 32A) charging via the SAE J1772™ connector standard.
- CT2100 family: Supports simultaneous Level II (208/240V @ 32A) charging via the SAE J1772™ connector standard and Level I (120V @ 16A) charging via a standard NEMA 5-20R outlet.

Up to 127 charging stations can communicate to and be managed by a single gateway charging station, which, in turn, uses the local cellular network to communicate with the CPNOS.

### ChargePoint Network Operating System

Based on an open, highly secure, standards-based platform the CPNOS is architected to provide the following functionality for millions of networked charging stations:

- Communication with networked charging stations to provide access control, monitoring, management, and remote upgrades of individual stations.
- Runs on secure third-party hosted servers.
- Supports multiple Web-based applications that provide a rich set of features and functions for drivers, municipalities, corporations, installers, fleet operators and utility companies.
- Built on a scalable, industry standard platform: Linux, Apache, MySQL, PHP (LAMP).

### Open Access to all Drivers

By virtue of being networked, ChargePoint Networked Charging Stations can be configured to be open to all drivers of electric vehicles without the need for a “subscription”, or a relationship with a local utility, or an owner of that charging station. Drivers can access a ChargePoint Networked Charging Station by:

- Paying for a single charging session by placing a toll free call to the 24/7 telephone number.
- Becoming a member of the ChargePoint Network by choosing a monthly subscription plan to fit their lifestyle.
- Paying via a smart (RFID) credit/debit card (future)
- Paying via standard credit or debit cards at Remote Payment Stations (RPSs) (future).

Because the architecture is open, members of other charging systems will be able to use their smart cards at any ChargePoint Networked Charging Station—just as they can roam between cell phone networks.

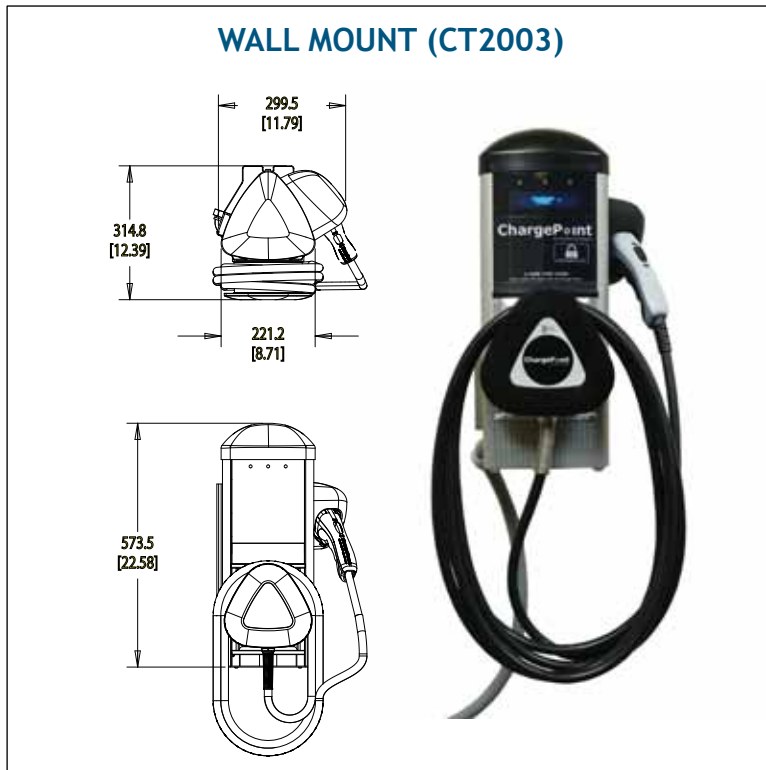
### Networking Capabilities and Benefits

ChargePoint Networked Charging Stations provide many advantages over non-networked charging stations:

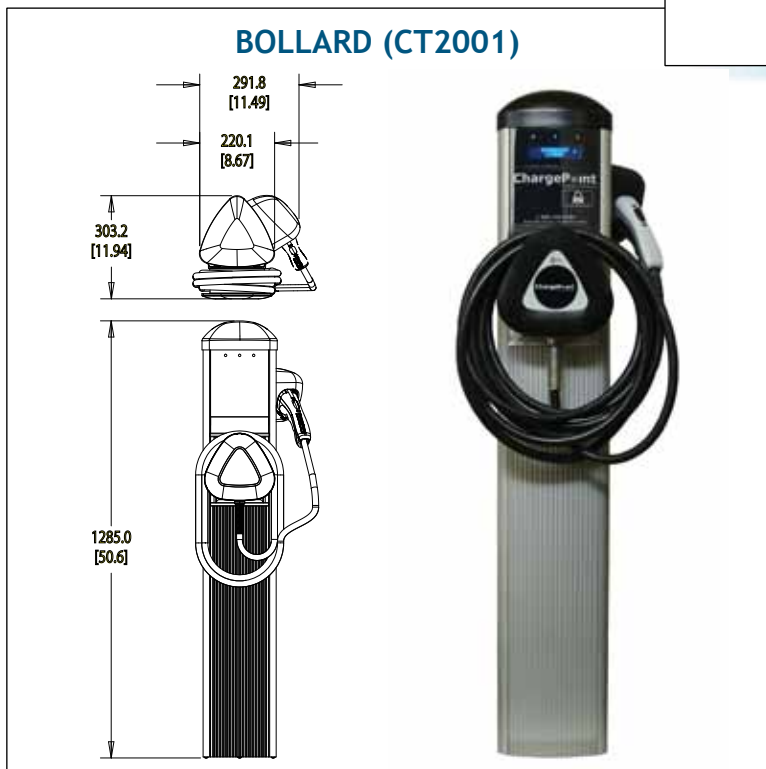
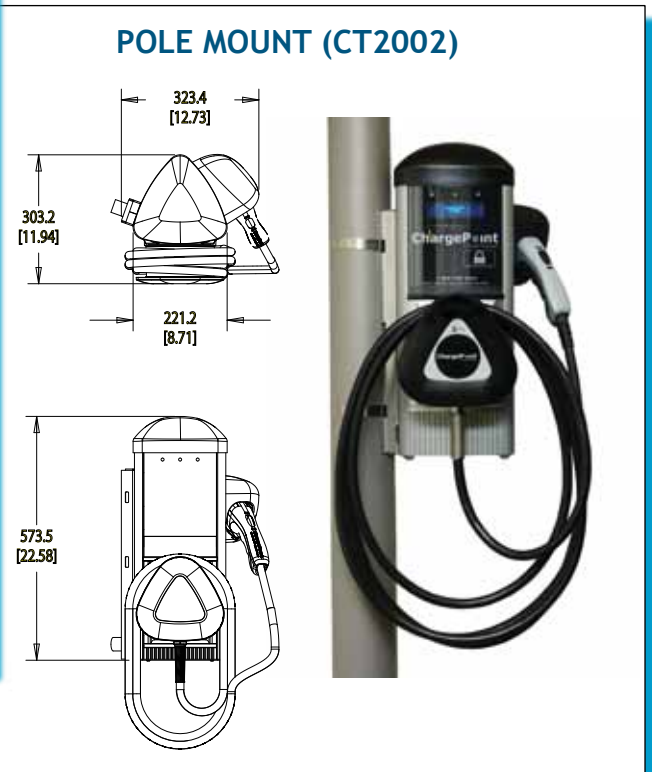
- Open charging infrastructure to all drivers, without requiring subscriptions.
- Create a revenue stream to pay for electricity, capital equipment and maintenance.
- Allow drivers to find unoccupied charging stations via Web-enabled cell phones.
- Notify drivers by SMS text or email when charging is complete.
- Authenticate access to eliminate energy theft.
- Authorize energizing to improve safety.
- Enable remote monitoring and diagnostics for superior quality of service.
- Integrate with the Smart Grid for utility load management with future V2G capabilities.
- Enable fleet vehicle management.



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



## Mechanical Drawings CT2000 FAMILY

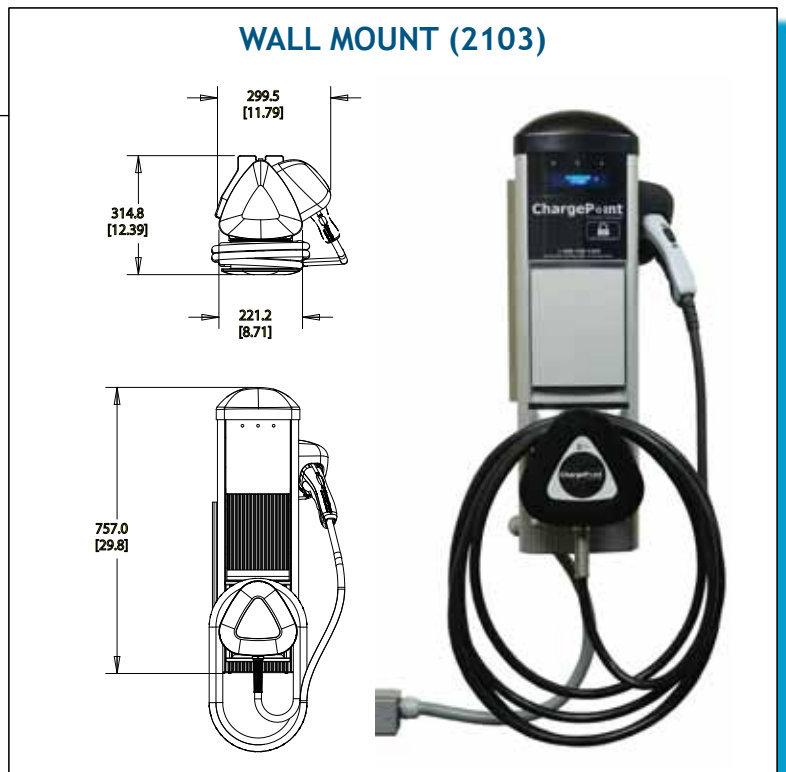
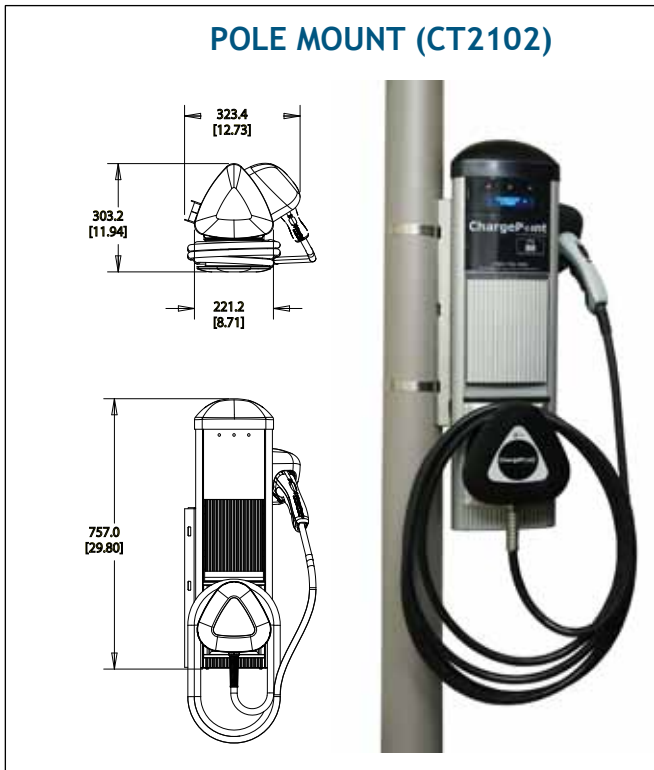


## FEATURES

- Smart card: Open, standards-based RFID provides authorized network access control preventing electricity theft, enhancing safety and minimizing liability.
- Automatic SMS text and/or email notification: Warns drivers of events and issues, such as when charging is complete or interrupted.
- High Availability: Real-time remote control monitoring and management features minimize station downtime and enable remote start/stop of charging sessions.
- 24/7 ChargePoint Network customer support. Available via toll-free number.
- Advanced safety features (Level I): Power is not energized until the driver is authorized, plug is fully inserted, and the door is locked.
- Locking door (Level I): Retains the charging cord to prevent theft, and includes auto unlock in case of power outage.
- Plug-out detect (Level I): Automatically detects if charging cord has been un-plugged at the vehicle, de-energizes outlet and optionally notifies driver (patent pending).
- GFCI: Integral hardware ground-fault protection circuitry with auto retry minimizes nuisance GFCI trips.

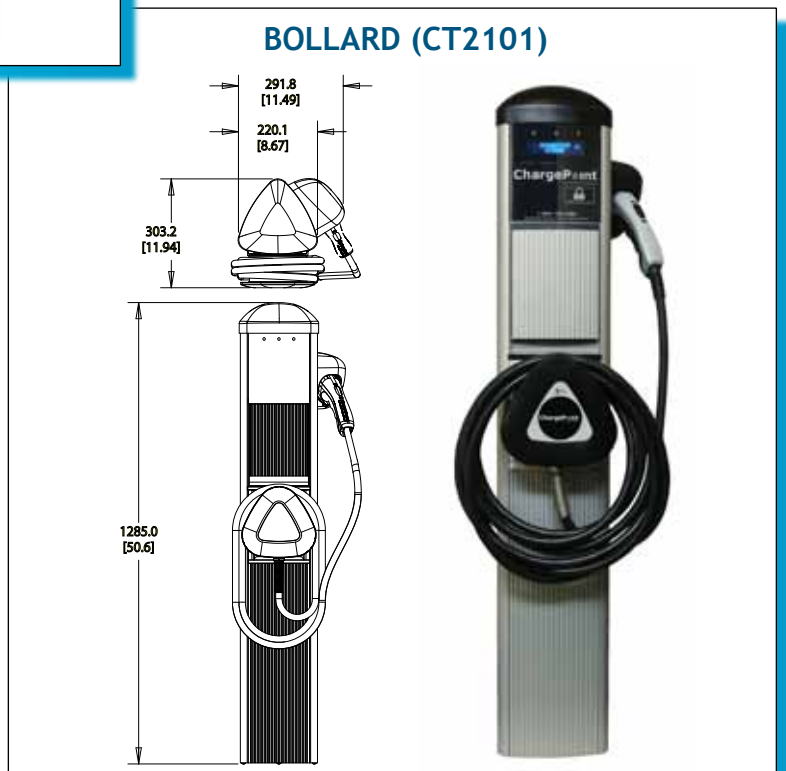


## Mechanical Drawings CT2100 FAMILY



### FEATURES cont.

- Fast over-current detect at charging station: Minimizes nuisance breaker trips at service panel.
- Bi-directional, utility-grade power measurement: Integral power metering circuitry provides accurate measurement of energy delivered for charging and allows calculation of Green House Gas savings.
- Wide Area Network Connection - CDMA or GSM: Only one gateway charging station with cellular modem is required per local group of charging stations.
- HTTPS and 128-bit AES encryption: Ensures secure network communications.
- Integrated RFID Reader: Recognizes and identifies ChargePoint Network Smart Cards, and authorized smart cards from other charging systems.
- Future-proofed: Upgrade all firmware remotely via the network as new capabilities and functionality become available.
- Electric utility demand-side management: Communicates via an HTTPS secure link to utility and third party "Smart Grid" management systems to provide real-time load shedding of any group of charging stations.
- Vacuum fluorescent display: Bright and easy-to-read.





## Specifications (preliminary)

### CT2000 FAMILY

### CT2100 FAMILY

Charging Connection	Level II: SAE J1772™ EV connector on 18' cable	Level II: SAE J1772™ EV connector on 18' cable Level I: NEMA 5-20R receptacle
AC Charging Power Output	Level II: 7.7kW (240VAC @ 32A)	Level II: 7.7kW (240VAC @ 32A) Level I: 1.9kW (120VAC @ 16A) Supports simultaneous Level I and Level II charging
AC Power Input	Level II: 32A; Line 1, Line 2, and Earth (no Neutral) connection, 208VAC or 240VAC operation	Level II: 32A; Line 1, Line 2, and Earth (no Neutral) connection, 208VAC or 240VAC operation Level I: 16A Line, Neutral, and Earth connection, 120VAC
Recommended Service Panel Breaker	Level II: Dual-pole 40A breaker on dedicated circuit	Level II: Dual-pole 40A breaker on dedicated circuit Level I: Single 20A breaker on dedicated circuit
Recommended Service Panel GFCI	None. Do not provide GFCI at panel	None. Do not provide GFCI at panel
Integral Hardware GFCI	20mA CCID with auto retry (15 min delay, 3 tries)	20mA CCID with auto retry (15 min delay, 3 tries) Both Level I and Level II outputs
Automatic Plug-Out Detection	Level II: Power terminated per SAE J1772™ specification CPNOS SMS or email notification	Level II: Power terminated per SAE J1772™ specification, CPNOS SMS or email notification Level I: Auto Power Termination on plug out at vehicle w/programmable arming and trip currents (patent pending), CPNOS SMS or email notification
Power Measurement	1% @ 5 min interval; ANSI C12 0.5% capable (special order)	1% @ 5 min interval; ANSI C12 0.5% capable (special order) Both Level I and Level II outputs
Local Area Network	2.4GHz 802.15.4 dynamic mesh network	
Wide Area Network	Commercial CDMA or GPRS cellular data network	
Network Communication Protocol	TCP/IP	
Network Security	HTTPS; 128-bit AES Encryption	
Maximum Charging Stations per 802.15.4 Radio Group	128	
Smart Card Reader	ISO 15693 compliant	
Standby Power	5W typ.	
Outdoor Rated	NEMA 3 per NEMA250-1997, IP54 per IEC 60529	
Safety Compliance	UL Listed per UL 2231-1, UL 2231-2, and UL 2594. NEC Article 625 Compliant.	
Surge Protection	6kV @ 3,000A In geographic areas subject to frequent thunderstorms, supplemental surge protection at the service panel is recommended.	
EMI Compliance	FCC Part 15 Class A	
Operating Temperature	-30°C to +55°C ambient	
Operating Humidity	Up to 95% non-condensing	
Terminal Block Temperature Rating	100°C	
Approximate Shipping Weights	Bollard (CT2001) 58lbs Pole Mount (CT2002) 40lbs Wall Mount (CT2003) 40lbs	Bollard (CT2101) 65lbs Pole Mount (CT2102) 49lbs Wall Mount (CT2103) 51lbs