Response to State of Iowa RFP 1119005053 for Electric Vehicle Charging Stations

Quote Number: OC20107
August 12, 2019

opconnect®

7150 SW Hampton St, Ste 111
Tigard, OR 97223
www.opconnect.com

August 12, 2019

Letter Number: **OC-2019-10**

Iowa Department of Administrative Services
Central Procurement Bureau
Nancy Wheelock, Purchasing Agent
Hoover Building, Floor 3
1305 E. Walnut Street
Des Moines, IA 50319

Subject: **OpConnect Response to State of Iowa RFP 1119005053 for EV Charging Stations**

Reference: RFP 1119005053

This letter accompanies OpConnect® submittal of a response to the reference RFP. I am an Iowa State University graduate and have family in Iowa so as the founder and CEO of OpConnect, I am personally excited about the opportunity to help in your vehicle electrification efforts. As you will find when contacting our reference customers, once we are selected, we are committed to the success of a project. We understand that the most important function we provide is to keep the EVSE resources available for drivers to use when they need it. I would be glad to come in and meet with your team to discuss our charging station offerings further.

Here is some basic information about our company:

Company Information	
Company Name	OpConnect, Inc
Company mailing address	7150 SW Hampton St, Ste 111 Portland, OR 97223
Company main phone number	(503) 477-5742
Company fax	(503) 477-5866
Primary contact email address	dturner@opconnect.com
Company website	www.opconnect.com
Company Federal Tax ID number (EIN)	27-2814374
DUNS number	015269354
Year founded	2012

This proposal is genuine, and not sham or collusive, nor made in the interest or in behalf of any person not herein named; the Respondent has not directly or indirectly induced or solicited any other Respondent to put in a sham bid, or any other person, firm or corporation to refrain from submitting a proposal; and the Respondent has not in any manner sought by collusion to secure

for themselves an advantage over any other Respondent. As the CEO of OpConnect, I am authorized to legally bind OpConnect to any agreement resulting from our submittal of this response.

Sincerely,

Dexter Turner
CEO, OpConnect

Revision Reason:	**N/A**
Title:	**Response to State of Iowa RFP 1119005053 for Electric Vehicle Charging Stations**
Representative:	Dexter Turner OpConnect (503) 553-9106 dturner@opconnect.com
Customer:	**RFP Number: RFP1119005053** RFP Title: Electric Vehicle Charging Stations Nancy Wheelock Iowa Department of Administrative Services Central Procurement Bureau Hoover Building, Floor 3 1305 E. Walnut Street Des Moines, IA 50319
Shipping Address:	**TBD**
References:	1. **RFP Number: RFP1119005053**

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Attachment #4 - Response Check List

RFP REFERENCE SECTION	RESPONSE INCLUDED		LOCATION OF RESPONSE
	Yes	No	
TECHNICAL PROPOSAL			
3. One (1) Original and One (1) Electronic copy of the Proposal	X		This document
3. One (1) Public Copy with Confidential Information Excised		X	N/A – no confidential information
3. Transmittal Letter	X		Cover page to this document
3. Table of Contents	X		Page 2 of this document
3. Executive Summary	X		Page 5 of this document
3. Respondent Background Information	X		Page 14 of this document
3. Experience	X		Page 15 of this document
3. Specifications (See Sections 5.1 and 5.2)	X		Attachment 8, Page 36 of this document
3. Terminations	X		Page 16 of this document
3. Acceptance of Terms and Conditions	X		Page 17 of this document
3. Certification Letter (Attachment #1)	X		Page 19 of this document
3. Authorization to Release Information (Attachment #2)	X		Page 21 of this document
3. Firm Proposal Terms	X		Page 17 of this document
5.1 Mandatory Specifications	X		Page 6 of this document
5.2 Scored Technical Specifications	X		Page 6 of this document
5.3 Optional Specifications	X		Page 13 of this document
Form 22 – Request for Confidentiality (Attachment #3)	X		Page 23 of this document
Federal Contract Clauses (Attachment #6)	X		Page 26 of this document
COST PROPOSAL (Attachment #5) (submitted in separate, sealed envelope)			

One (1) Original and One (1) Electronic copy of the Proposal	X		Separate document as requested

Executive Summary

OpConnect is an electric vehicle fueling solution provider. We were founded in 2012 in Portland, Oregon by Dexter Turner (Iowa State University class of 1989 and 1990) and continue to have our headquarters in Portland today. OpConnect is supporting the reduction in greenhouse gases caused by transportation by providing turnkey electric vehicle fueling solutions throughout North America that consist of charging station infrastructure, a cloud-based software platform that provides payment processing, scheduling and maintenance ticketing for the charging infrastructure, and support services for persons using the fueling infrastructure. We have installed and manage roughly 1000 EV charging ports connected to our cloud-based software platform. Our customers include electric utilities, major hotel and hospitality brands, commercial properties, apartment and condos, and rental car agencies. In addition to installing, operating and maintaining EV charging stations under contract with the charging station owners (i.e. acting as a charging network or EV service provider) we also license our EV fueling management software platform, including web portals and mobile apps for drivers to find and use charging stations, to fueling solution providers throughout the world so that they can easily stand up their own charging networks for their local drivers.

We are excited about the opportunity of becoming a supplier of EV charging services to the State of Iowa. If we are awarded a contract to supply EV chargers, and operate and maintain these charging stations we will provide reliable, cost-effective charging stations and ensure that these chargers have best-in-breed uptime for your EV drivers. We have read and reviewed the terms and conditions in this RFP and can comply with them. We are presenting descriptions and specifications of our charging stations that indicate their compliance with the requirements in this RFP. OpConnect offers a range of charging stations from non-networked stations which some of your agencies may want to use for fleet operations, to networked chargers that are targeted at fleet, workplace or public charging use. Specifications and pricing will be provided for Level 2 and DC fast chargers, including the latest high-powered (L4) DC fast chargers, along with the services to operate and maintain these chargers.

Business Point of Contact	
Full Name	Dexter Turner
Title	CEO
Phone number	(503) 553-9106
Email address	dturner@opconnect.com

Dexter is the founder of OpConnect. He has been responsible for the product vision for the OpConnect EVSE products, cloud network services and business development activities. He has negotiated partnerships with charging hardware and service providers and is currently building distribution channel

partnerships and managing key contracts, such as state-wide supply contracts.

Dexter has previous startup experience as the founder of Optimization Technologies, Inc., a software company specializing in communications security software and aerospace software technology. Optimization was founded by Dexter in 2001 and shortly thereafter, Dexter spun OP Technologies, Inc. out of Optimization as a stand-alone company producing cockpit displays and software targeted at private aircraft. Dexter holds a B.S. and M.S. in Aerospace Engineering from Iowa State University and an MBA from Seattle University.

Mandatory Specifications and Scored Technical Specifications

5.1 Mandatory Specifications	
5.1.1 Proposed equipment must be Level 2 AC charging and/or Direct-Current Fast Charging (DCFC), sometimes referred to Level 3 charging.	**Level 2 Chargers:** HCS-40 (non-networked fleet use) HCS-40-N (networked with access control and payment via mobile app only – fleet use with data collection and workplace charging) HCS-50 (non-networked fleet use) HCS-50-N (networked – fleet and workplace charging) CS-100 (non-networked fleet use) CS-100-N (networked fleet with data collection) L2X-30 (networked, including credit card reader) L2X-40 (networked, including credit card reader) **DC Fast Chargers:** L3R-50 (networked 50kW DC fast charger) **High Power (L4) DC Fast Chargers:** EVP-FC200 – power enclosure EVDSP-FC-350 – dispenser unit
5.1.2 The proposed solution must provide Green House Gas Savings Reporting.	Yes – This is available from the OpConnect EV charger management platform. Any State agencies with EV chargers will have login access to the web portal to view and download reports and reports can be automatically emailed to agencies weekly, monthly or quarterly (at whichever interval they select). The Dept of Administrative Services will also have access to the web portal to see the activities of ALL State-owned chargers
5.2 Scored Technical Specifications	
5.2.1 Proposed Equipment	
5.2.1.1 Equipment Specifications	
Please detail the make and model of the proposed equipment and provide a summary	OpConnect offers multiple model EV chargers to fit the varying needs of different organizations. We

overview of the benefits and features of the proposed equipment. In addition, please describe in detail how the proposed equipment will meet and/or exceed the performance needs of state agencies and political subdivisions. Attach an information specification sheet for the Electric Vehicle Charging Stations being proposed in the Proposal.	have included a table in Attachment 8 that lists all of the Level 2 and DCFC models that we are offering the State, their primary features and their application or uses. Specification sheets for each model charger are also included in this Attachment
5.2.1.2 Vehicles Capable of Being Charged	
Provide a detailed listing of the vehicles (responses should include make/model information) that proposed Electric Vehicle Charging Stations are able to charge. Listing provided shall include all vehicles capable of being charged. In the event future vehicle types will be accommodated but are not currently implemented, these vehicles shall be noted to include the projected date proposed EVSE system will be compatible with all known future model year vehicles.	The chargers we are proposing use J1772 charge couplers for Level 2 and CHAdeMO and CCS1 connectors for DC fast charging. These are the industry standard connectors so our chargers serve all production EVs available in the US as of this writing (note that Tesla uses an adapter to go from J1772 to the custom Tesla inlet on the car). Since the RFP is requesting a list of EVs, Attachment #9 has been added to list the known production EVs available in the US.
5.2.2 Charging Complete Notification	
Describe and detail methods Respondent is able to notify customer when charging is complete. Indicate whether notifications can be sent, at a minimum, via SMS, text, or e-mail.	EV drivers receive SM text and email alerts when charging is complete. Note that if a driver pays with a credit card the platform does not know their email address or phone number so they receive no alerts. Credit card users want to keep their information as private as possible so this is the tradeoff.
5.2.3 Customer Dashboard	
Explain the proposed solutions customer dashboard for networked EVSE which allows the site host to monitor their site(s) and obtain information about the station status, usage patterns, revenue, greenhouse gas savings, and other details as applicable to the solution. If any screen shots or examples of the dashboard are available, please submit those in the Proposal.	Attachment #10 includes details about the OpConnect web portal dashboard

5.2.4 Equipment Accessibility and Integration	
5.2.4.1 Accessibility without Subscription	
Describe and detail how proposed solution ensures that the Electric Vehicle Charging station infrastructure is open to all drivers without requiring subscriptions. Responses shall include detailed information on how Respondent's infrastructure operates.	OpConnect offers a number of chargers for a variety of uses (fleet vs workplace employees vs public drivers, etc.). Details about the individual charging stations is in the table in Attachment #8. For fleet chargers, or chargers with a usual set of users, such as workplace where employees use daily, we are proposing that the State can save a lot of money by using the HCS or CS line of chargers which either require no access control or payment or use a mobile app for access control or payment. For chargers that you want to allow wider access, we offer the L2X0 line of chargers that include credit card readers in addition to RFID or mobile app access. Note that the DC fast chargers also include credit card readers (as well as RFID or mobile app access)
5.2.4.2 Locating Charging Stations Via Web	
Describe in detail the ability of the proposed solution to locate charging stations via web enabled cellular phones as well as any other methods Respondent utilizes to ensure the parking community is able to easily locate a charging station.	OpConnect offers iOS and Android mobile apps that include a map to locate charging stations. Drivers do NOT have to sign up for any access to use the maps. We also cooperate with companies such as Chargeway or PlugShare to provide location data to their apps. Note also that we offer a private labeled version of the apps for $5,000. So, the State could offer its own branded app to locate State stations if desired.
5.2.4.3 Cable Management Strategy	
Describe how EVSE charging station cables will be stored to keep them clean, prevent cable wear and tripping hazards.	All of our charging stations offer either standard built-in cord management (the DC fast chargers have this) or an optional cord management to keep the cables off the ground. This system is similar to petrol station pumps whereas there is a reel that pulls the center point of the cable to the top of the charging station and a dock to put the coupler in when done fueling.
5.2.4.4 Equipment Integration	
Describe in detail any potential equipment integration with other EVSE networks that may be integrated at a later date throughout the State of Iowa.	OpConnect is supporting the Open Charge Point Interface (OCPI) protocol to facilitate future roaming agreements with other charging service providers.

5.2.4.5 Smart Grid Integration	
Describe in detail how or whether, the proposed solution includes a smart grid integration to utilize load management with future V2G capabilities.	The OpConnect platform supports OpenADR 2.0b for smart grid integration. In addition, we have some very innovative load management capabilities built into the HCS and CS networked chargers. Load management allows more chargers to be installed at a property without the need to upgrade the electrical service at the property. Chargers at a common location establish a local wi-fi network to balance the load among themselves without the need to communicate to a back end (over a costly cellular connection which might fail). For example, if only 200amps of service is available for all charging, the group of chargers will throttle themselves down when more EVs plug in which would exceed this load if they were all allowed to charge at full power. This functionality is provided as a standard feature at no additional cost and no need to install additional equipment
5.2.5 Site Infrastructure	
Describe how the power needs to be provided to the proposed EVSE stations. Responses should include, but are not limited to, the requirement for purchasing entity to provide power ready cabling.	OpConnect is a turnkey EV fueling solutions provider. So not only do we provide charging stations and the management platform for data collection, energy management and revenue collection, we also provide installation and maintenance services (through local contractors). State agencies can either install themselves or include installation in the procurement of the chargers. The Level 2 chargers require 208-240VAC single phase 3 wire service (l1, L2, ground wires). Service wiring (conduit and wire) must be brought to the install spot. Note that 3-phase is also okay – specific 3-phase instructions are in the install manual. The HCS series chargers include 3-wire pig-tails coming out the chargers that go into a junction box to mate with the service wiring. The CS and L2X0 series chargers require the service wiring to be brought into the charger enclosure and connected to a terminal block using screw posts.

	DCFC requires 480VAC 3-phase power to be brought to the install location and pulled into the charger enclosure (attached to terminal block inside the enclosure).
5.2.6 Charging Fees and Payment Methods	
5.2.6.1 Fees for Charging Vehicle and Charging Payment Methods	
Describe in detail the methods available for charging customers for charging their vehicle at proposed EVSE stations which are networked. The State is interested in a solution where the customer can be charged a fee directly.	OpConnect allows drivers to create an account (using the smartphone apps) to pay for charging at chargers where payment is required. Or certain chargers are equipped with credit card readers allowing the driver to use a card at the station (no need to call a phone number and provide a card number as with other charger networks). OpConnect collects the money from the driver and then remits the funds to the charger owner (State agency in this case) minus our fees. So customers pay directly.
Describe in detail the method of payment proposed EVSE stations are capable of processing. Response shall identify any payment methods that are not accepted.	Payment is via a membership (RFID or smartphone app) or with a credit card. If the card reader is broken for some reason the driver can provide a credit card number over the phone by calling our 24x7 customer support like (number is posted on every charger).
5.2.6.2 Credit Card Processing	
Include documentation describing the EVSE station's ability to comply with Payment Card Industry Data Security Standards (PCI-DSS), and any features or capabilities of the system that must be added, enabled, disabled, or changed in order for the system to operate in compliance with the PCI-DSS standards.	Includes as Attachment #11
5.2.7 Security	
5.2.7.1 Customer Data	
Describe in detail what customer account information is collected, where the customer account information is stored (country), and what security requirements and systems are in place to protect customer account information. (System backup and recovery.)	For credit card users, no information is collected. Card numbers are encrypted at the card reader and sent to the card processor with no decryption by OpConnect. For OpConnect members, we collect: name, card billing address, phone number, email address. We

	also ask for the make/model of the driver's EV to data analytics but they are not required to give it. We use Microsoft Azure for our data servers and information on US users is stored in the US. Data is encrypted at rest and https is used to transmit data. Data is backed up hourly and in a separate service from Azure to protect against a system-wider failure. Mirror servers are maintained so that backups can be restored and operations quickly resumed in the event of an outage.
5.2.7.2 Access Authentication	
In an effort to eliminate energy theft it is required that the proposed solution incorporate a method of authentication to access the charging stations. Describe in detail the options available for authentication with the proposed solution.	Credit card sessions require a physical card to be used at the station. For OpConnect users, they must log into their account in the mobile app to pay with the app. Or they can use their RFID tag, and it is their responsibility to keep control of their RFID tag.
5.2.7.3 PCI DSS Compliance	
Describe the process to stay current with Payment Card Industry Data Security Standards (PCI-DSS) requirements as they are updated. Responses shall include a copy of the current certification.	OpConnect contracts with one off the largest data processors in the country (USA Technology) for card processing services. We only use card readers that have encryption at the reader with encryption keys controlled by USA Tech. USA Tech is required to maintain PCI-DSS compliance updated based on new requirements.
5.2.8 Monitoring	
5.2.8.1 Parking Enforcement	
Describe in detail the proposed solution's ability to monitor and notify the purchasing entity if a vehicle has been there for a longer than pre-set time for the charge, whether the vehicle is fully charged and still there, or paid for an hour charge and no longer being charged but the vehicle is still in the charging parking space.	Our platform uses cost penalties to enforce parking time limits. The State has complete control over the pricing policies and they can be changed at any time using the web portal. Rate structures can be set up such that once charging is complete, the driver is assessed a cost per time period (minute or portion of hour) still plugged in. This cost can also increase over time (i.e. $2/hr for first hour then $5/hr for 2nd hour, $10/hr for 3rd hour)
5.2.8.2 Remote Monitoring and Diagnostics	
Describe in detail the capabilities of the proposed solution to be monitored and have diagnostics completed remotely for superior	The OpConnect platform includes an integrated maintenance ticketing system as shown in Attachment #10. The chargers are capable of sending error codes which are captured by the

quality of service.	platform. Automated maintenance tickets are created and automated text and email notifications are sent to maintenance personnel. Chargers can be accessed remotely to diagnose and attempt to correct software or other issues that are not related to some hardware damage or failure.
5.2.9 Support	
5.2.9.1 Technical Support	
It is required, at a minimum, that technical support personnel are available from 6:00 AM to 6:00 PM (central time), Monday through Saturday. Respondent shall clearly detail hours of support, methods of contacting support, and response times for technicians to be on-site.	We offer 24x7 driver support through a toll-free number posted on every charger
5.2.9.2 Issue Resolution/Escalation Process	
In the event of ongoing performance issues or technical support is unable to address a performance issue, please explain the escalation process that will be available to the purchasing entity to ensure concerns are addressed in an efficient and effective manner.	The State will be assigned an account manager that issues can be escalated to if call to the 24x7 support line or email to support@opconnect.com is not effective. If the account manager is not capable of resolving the issue, issues can be escalated to the company CEO, who is responding to this RFP.
5.2.10 Sustainability	
5.2.10.1 Incentive Opportunities	
Explain any sustainability funding opportunities associated with the implementation of EVSE that Respondent is aware of or can assist with obtaining the documentation needed to qualify for such incentives. Such opportunities may include but are not limited to Volkswagen Settlement funding, utility rebates, other incentives.	Unfortunately, Iowa appears to be off to a very slow start with no incentives for charger build-out at the moment. However, the Iowa Utility Board's recent clarifications that EV charging operators would not be treated as utilities is a step in the right direction and we are beginning our outreach efforts to the multiple electric utilities serving your state. Our only reply to this question at this time is that securing programs, incentives or rebates to assist with the required EV charger build-out if a work in progress and initially it may make sense for us to partner with your various state agencies to go to the utilities an request funding for pilot projects for example. Regarding the VW settlement funding – the Iowa DOT is the lead agency for the $20m of funding that the state is eligible for and 15% of those funds could be used for EV infrastructure

	build-out. Our understanding is that as of today, the plan for the use of those funds has not been finalized.
5.2.10.2 Green House Gas Savings	
Describe in detail how the proposed solution provides reporting on Green House Gas savings per driver and fleet. Submit an example report in the Proposal if available.	Usage reporting is provided by the OpConnect platform in reports that can be automatically emailed to the appropriate person weekly, monthly or quarterly. An example report is in Attachment #12
5.2.11 Fleet Vehicle Management	
Describe the proposed solution's capabilities for fleet vehicle management.	Usage by individual fleet vehicles can be tracked by using the networked charger options we have available. Specific cards can be kept in an individual vehicle and that card used to access the charger, allowing data collection and reporting by individual vehicles. We are also developing an update to our mobile that will allow for the entry of vehicle mileage at fueling events for additional data collection.
5.3 Optional Specifications	
5.3.1 Value Added Opportunities	
Describe all value-added opportunities that are available including, but not limited to, Volkswagen Settlement funding, utility rebates, other financial incentives, etc.	Unfortunately, Iowa appears to be off to a very slow start with no incentives for charger build-out at the moment. However, the Iowa Utility Board's recent clarifications that EV charging operators would not be treated as utilities is a step in the right direction and we are beginning our outreach efforts to the multiple electric utilities serving your state. Our only reply to this question at this time is that securing programs, incentives or rebates to assist with the required EV charger build-out if a work in progress and initially it may make sense for us to partner with your various state agencies to go to the utilities an request funding for pilot projects for example. Regarding the VW settlement funding – the Iowa DOT is the lead agency for the $20m of funding that the state is eligible for and 15% of those funds could be used for EV infrastructure build-out. Our understanding is that as of today, the plan for the use of those funds has not been finalized.
5.3.2 Equipment Installation	
This RFP is for the use by state agencies and	OpConnect is a turnkey EV fueling solutions

political subdivisions and therefore does not contain any specific project requirements regarding installation. However, Respondents may include information about the equipment installation services they provide in their Technical Proposal and include any associated costs for installation in their Cost Proposal.	provider. So not only do we provide charging stations and the management platform for data collection, energy management and revenue collection, we also provide installation and maintenance services (through local contractors). State agencies can either install themselves or include installation in the procurement of the chargers.

Respondent Background Information

3.2.5.1 Does your state have a preference for instate vendors? Yes or No. If yes, please include the details of the preference.

OpConnect is based on Oregon and Oregon does not have any preference for instate vendors.

3.2.5.2 Name, address, telephone number, fax number and e-mail address of the Respondent including all d/b/a's or assumed names or other operating names of the Respondent and any local addresses and phone numbers.

Company Information	
Company Name	OpConnect, Inc
Company headquarters address	7150 SW Hampton St, Ste 111 Portland, OR 97223
Company main phone number	(503) 477-5742
Company website	www.opconnect.com
Company Federal Tax ID number (EIN)	27-2814374
DUNS number	015269354
Year founded	2012
Form of business entity	Corporation
State of incorporation	Oregon
Number of employees	14
Type of business	Electric vehicle charging solution provider
Years of experience providing solutions in this RFP response (question 3.2.6.1 & 3.2.6.2)	7
Accounting firm	Bilby Tax and Accounting, LLC

3.2.5.8 Name, address and telephone number of the Respondent's representative to contact regarding all contractual and technical matters concerning the Proposal.

Point of Contact – Contractual, technical, scheduling and other arrangements	
Full Name	Dexter Turner
Title	CEO
Phone number	(503) 553-9106
Email address	dturner@opconnect.com

Experience

3.2.6.3 The level of technical experience in providing the types of goods and/or services sought by the RFP.

OpConnect has been installing and operating EV charging stations since our founding in 2012. OpConnect was spun out of an Aerospace technology called Optimization Technologies, which began experimenting with EV charging in 2010 as a new business line. As opposed to some EV service providers, OpConnect is one of the few companies in business today that has developed and earned UL certification for our own Level 2 charging station designs. We manufactured our own EV chargers through 2016. But as we learned more about the many different uses for EV charging, from sedan fleets, to bus and truck fleets, to workplace to public charging, we decided that we needed to offer a broad range of charging stations to meet these many uses. So, we formed partnerships with charging station manufacturers to resell their chargers and have expanded our offering to chargers for every use case.

3.2.6.4 A list of all goods and/or services similar to those sought by this RFP that the Respondent has provided to other businesses or governmental entities.

- Own and operate EV charging on behalf of City
- Supply of EV charging management services including
  - Supply of EV charging stations
  - Supply of EV charger installation services
  - Supply of EV charging maintenance services
  - Supply of EV driver support services (24x7 driver support)

Here are Just Some of our Customers and Partners

References

Please feel free to contact the following customers to provide a reference for OpConnect:

Jimmy Yao
Hawaiian Electric Company
Jimmy.yao@hawaiianelectric.com
(808) 292-1860

Gideon Banner
National Grid
Gideon.banner@nationalgrid.com
(718) 431-3160

Portland General Electric
Vanny Kong
Customer Specialized Programs
Vanny.kong@pgn.com
(503) 464-7857

Termination, Litigation, Debarment

The Respondent must provide the following information for the past five (5) years:

3.2.7.1 Has the Respondent had a contract for goods and/or services terminated for any reason? If so, provide full details regarding the termination.	No
3.2.7.2 Describe any damages or penalties assessed against or dispute resolution settlements entered into by Respondent under any existing or past contracts for goods and/or services. Provide full details regarding the circumstances, including dollar amount of damages, penalties and settlement payments.	None – not applicable
3.2.7.3 Describe any order, judgment or decree of any Federal or State authority barring, suspending or otherwise limiting the right of the Respondent to engage in any business, practice or activity.	None – not applicable
3.2.7.4 A list and summary of all litigation or threatened litigation, administrative or regulatory proceedings, or similar matters to which the Respondent or its officers have been a party.	None – not applicable
3.2.7.5 Any irregularities discovered in any of the accounts maintained by the Respondent on behalf of others. Describe the circumstances and disposition of the irregularities.	None – not applicable

Criminal History and Background Investigation

OpConnect, Inc. hereby explicitly authorizes the Agency to conduct criminal history and/or other background investigation(s) of the Respondent, its officers, directors, shareholders, partners and managerial and supervisory personnel who will be involved in the performance of the Contract.

Acceptance of Terms and Conditions

OpConnect, Inc. acknowledges its acceptance of the terms and conditions of the reference RFP and the General Terms and Conditions without change (we are not requesting exceptions).

Certification Letter

RFP Attachment #1 (Certification Letter, signed) is included as Attachment 1 of this document.

Authorization to Release Information

RFP Attachment #2 (Authorization to Release Information Letter, signed) is included as Attachment 2 of this document.

Firm Proposal Terms

OpConnect, Inc. guarantees that the goods and/or services offered in the Proposal are currently available and that all Proposal terms, including price, will remain firm for the number days indicated on the RFP cover sheet following the deadline for submitting Proposals.

Request for Confidentiality

RFP Attachment #3 (Request for Confidentiality, signed) is included as Attachment 3 of this document.

Payment Methods

3.3.1.1 Credit card or ePayables

The State of Iowa's Purchasing Cards (Pcards) and ePayable solution (EAP) are acceptable as a method of payment to OpConnect. OpConnect agrees to meet the requirements of RFP section 7.

3.3.1.2 Electronic Funds Transfer (EFT) by Automated Clearing House (ACH)

OpConnect is capable of accepting payment by EFT by ACH.

3.3.3 Respondent Discounts

3.3.3.1 Prompt Payment Discount

The State can agree to pay in less than sixty (60) days if an incentive for earlier payment is offered.

3.3.3.2 Cash Discount

The State may consider cash discounts when scoring Cost Proposals.

July 17, 2019

To: All Potential Respondents
From: Nancy Wheelock, Purchasing Agent
Subject: RFP1119005053 – Electric Vehicle Charging Stations

Addendum One

Please amend the subject RFP to include the following:

The State is amending the due date for Respondents to submit RFP written questions, requests for clarification, and suggested changes from July 17, 2019 to July 25, 2019. **All questions are due by July 25, 2019 no later than 3:00 p.m. central time.**

The State is amending the due date for Proposals from August 2, 2019 to August 13, 2019. **All proposals for this RFP are now due on August 13, 2019 no later than 3:00 p.m. central time.**

Please amend the subject RFP to include answers to the following timely submitted questions:

Q1. Can the State provide a description of one or several potential depots including information on the number and type of EVs that will be deployed over time, the duty cycle of the vehicles, a description of the existing utility interconnection including utility power delivery capabilities?

A1. The purpose of this RFP is to provide access to Electric Vehicle Charging Stations (EVCS) for public entities who will be receiving funding from the Volkswagen Clean Air Act Civil Settlement. The resulting contracts will also be available for the purchasing of EVCS outside of the VW Settlement funding. The Department of Administrative Services – Central Procurement Bureau will create master agreements from this RFP which state agencies, cities, counties and public schools may use to purchase EVCS without the need for further competitive bidding per their individual entity policies and procedures.

Initial funds are expected to be released use by public entities sometime in the Fall of 2019. Therefore, the State is unable to provide project details, expected usage, duty cycle of vehicles, or current interconnectivity capabilities because this RFP is not for any specific upcoming project, but potentially for many upcoming projects by various public entities in Iowa.

Q2. Does the State presently have a common fueling software platform and does it wish to retain this platform for EVs?

A2. State agencies do not currently have any EVCS installed.

Q3. What is the time frame over which the State contemplates or otherwise forecasts a deployment of EVs in its fleets?

i. What vehicle classes does the State wish to transition on a priority basis to EVs?

ii. What is the State's objectives in connection with any transition to EVs; sustainability, reduced maintenance expense, reduced fuel costs?

A3. The State does not anticipate a large replacement of fleet vehicles with PHEV/EV vehicles at this time.

i. The vehicle classes for state agency use would potentially be sub-compact, compact and mid-size sedans.

ii. For public use chargers, a wider variety of vehicles should be anticipated. Please see A3 above. Each public entity purchasing from the resulting contracts has their individual objectives.

Q4. Will the State entertain entering into a comprehensive develop, construct and finance EV solution under a long-dated services agreement to cover a portfolio of state fleet depots?

A4. No, that is not the purpose of this RFP.

Please acknowledge receipt of this addendum by signing in the space provided below, and <u>return this letter with your offer (do not send back separately).</u>

I hereby acknowledge receipt of this addendum.

Signature

8/9/2019

Date

Dexter Turner

Typed or Printed Name

July 26, 2019

To: All Potential Respondents
From: Nancy Wheelock, Purchasing Agent
Subject: RFP1119005053 – Electric Vehicle Charging Stations

Addendum Two

Please amend the subject RFP to include answers to the following submitted questions:

Q1. Section 3 – 3.1.4 states: Proposals shall not contain promotional or display materials.

Scope of Work Section 5.2.1 - Proposed Equipment - 5.2.1.1 Equipment Specifications states: Attach an information specification sheet for the Electric Vehicle Charging Stations being proposed in the Proposal.

The RFP contains a request in the Scope of Work to provide a variety of EVSE solutions (non-networked, networked, Level 2 and DC, etc.) and instructs to attach specification sheets. Would data sheets on these various types of EVSE be considered "promotional" in nature?

A1. The State does not consider data sheets with technical information, equipment photos, explanations of how the equipment works, etc., to be "promotional" in nature.

Q2. Section 3 - 3.1.6 states: If a Respondent proposes more than one solution to the RFP specifications, each shall be labeled and submitted in a separate Proposal and each will be evaluated separately.

Since the Scope of Work requests multiple solutions this apparent requirement to submit each option in a "separate Proposal" will add a great deal of additional work in preparing our response. Please clarify so we might consider avoiding submission of numerous proposals.

A2. The State will accept the proposal of multiple types of equipment within the same proposal. Respondents may also have several methods of payment such as through an outright purchase or a lease program which may be proposed within the same proposal. It's at the discretion of the Respondent as to whether they choose to separate their solutions into multiple proposals.

Q3. Attachment #5 – Cost Proposal and the pricing table for the "Deliverable Items" only has a single (1) line for the unit cost of Electric Vehicle Charging Station and Annual License Fee.

As stated above the State of Iowa is requesting multiple solutions, that result in multiple pricing amounts so where can we place all the station types and license pricing?

A3. Respondents may adjust the number of lines as needed in Attachment #5 – Cost Proposal. An Excel spreadsheet may be used in lieu of the template provided in Attachment #5 with the same and additional categories as needed. The State asks that the pricing be provided in a readable format.

Please acknowledge receipt of this addendum by signing in the space provided below, and <u>return this letter with your offer (do not send back separately).</u>

I hereby acknowledge receipt of this addendum.

Signature

8/9/2019
Date

Dexter Turner
Typed or Printed Name

Attachment # 1 Certification Letter

August 9, 2019

Nancy Wheelock, Issuing Officer
Iowa Department of Administrative Services
1305 E. Walnut Street
Des Moines, IA 50319

Re: RFP1119005053 - PROPOSAL CERTIFICATIONS

Dear Nancy:

I certify that the contents of the Proposal submitted on behalf of OpConnect, Inc. (**Respondent**) in response to Iowa Department of Administrative Services for RFP1119005053 for Electric Vehicle Charging Stations are true and accurate. I also certify that Respondent has not knowingly made any false statements in its Proposal.

Certification of Independence

I certify that I am a representative of Respondent expressly authorized to make the following certifications in behalf of Respondent. By submitting a Proposal in response to the RFP, I certify in behalf of the Respondent the following:

1. The Proposal has been developed independently, without consultation, communication or agreement with any employee or consultant to the Agency or with any person serving as a member of the evaluation committee.

2. The Proposal has been developed independently, without consultation, communication or agreement with any other Respondent or parties for the purpose of restricting competition.

3. Unless otherwise required by law, the information found in the Proposal has not been and will not be knowingly disclosed, directly or indirectly prior to Agency's issuance of the Notice of Intent to Award the contract.

4. No attempt has been made or will be made by Respondent to induce any other Respondent to submit or not to submit a Proposal for the purpose of restricting competition.

5. No relationship exists or will exist during the contract period between Respondent and the Agency or any other State agency that interferes with fair competition or constitutes a conflict of interest.

Certification Regarding Debarment

6. I certify that, to the best of my knowledge, neither Respondent nor any of its principals: (a) are presently or have been debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by a Federal Agency or State Agency; (b) have within a three year period

preceding this Proposal been convicted of, or had a civil judgment rendered against them for commission of fraud, a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction, violation of antitrust statutes; commission of embezzlement, theft, forgery, falsification or destruction of records, making false statements, or receiving stolen property; (c) are presently indicted for or criminally or civilly charged by a government entity (federal, state, or local) with the commission of any of the offenses enumerated in (b) of this certification; and (d) have not within a three year period preceding this Proposal had one or more public transactions (federal, state, or local) terminated for cause.

This certification is a material representation of fact upon which the Agency has relied upon when this transaction was entered into. If it is later determined that Respondent knowingly rendered an erroneous certification, in addition to other remedies available, the Agency may pursue available remedies including suspension, debarment, or termination of the contract.

Certification Regarding Registration, Collection, and Remission of Sales and Use Tax

7. Pursuant to *Iowa Code sections 423.2(10) and 423.5(4) (2016)* a retailer in Iowa or a retailer maintaining a business in Iowa that enters into a contract with a state agency must register, collect, and remit Iowa sales tax and Iowa use tax levied under *Iowa Code chapter 423* on all sales of tangible personal property and enumerated services. The Act also requires Respondents to certify their compliance with sales tax registration, collection, and remission requirements and provides potential consequences if the certification is false or fraudulent.

By submitting a Proposal in response to the (RFP), the Respondent certifies the following: (check the applicable box)

Respondent is registered with the Iowa Department of Revenue, collects, and remits Iowa sales and use taxes as required by *Iowa Code Chapter 423*; or

Respondent is not a "retailer" or a "retailer maintaining a place of business in this state" as those terms are defined in *Iowa Code subsections 423.1(47) and (48)(2016).*

Respondent also acknowledges that the Agency may declare the Respondent's Proposal or resulting contract void if the above certification is false. The Respondent also understands that fraudulent certification may result in the Agency or its representative filing for damages for breach of contract in additional to other remedies available to Agency.

Sincerely,

Signature

Dexter Turner, CEO — 8/5/2019

Name and Title of Authorized Representative **Date**

Attachment #2 Authorization to Release Information Letter

August 9, 2019

Nancy Wheelock, Issuing Officer
Iowa Department of Administrative Services
1305 E. Walnut Street
Des Moines, IA 50319

Re: RFP1119005053 - AUTHORIZATION TO RELEASE INFORMATION

Dear Nancy:

OpConnect, Inc. **(Respondent)** hereby authorizes the Iowa Department of Administrative Services ("Agency") or a member of the Evaluation Committee to obtain information regarding its performance on other contracts, agreements or other business arrangements, its business reputation, and any other matter pertinent to evaluation and the selection of a successful Respondent in response to RFP1119005053.

The Respondent acknowledges that it may not agree with the information and opinions given by such person or entity in response to a reference request. The Respondent acknowledges that the information and opinions given by such person or entity may hurt its chances to receive contract awards from the State or may otherwise hurt its reputation or operations. The Respondent is willing to take that risk.

The Respondent hereby releases, acquits and forever discharges the State of Iowa, the Agency, their officers, directors, employees and agents from any and all liability whatsoever, including all claims, demands and causes of action of every nature and kind affecting the undersigned that it may have or ever claim to have relating to information, data, opinions, and references obtained by the Agency or the Evaluation Committee in the evaluation and selection of a successful Respondent in response to the RFP.

The Respondent authorizes representatives of the Agency or the Evaluation Committee to contact any and all of the persons, entities, and references which are, directly or indirectly, listed, submitted, or referenced in the Respondent's Proposal submitted in response to RFP.

The Respondent further authorizes any and all persons and entities to provide information, data, and opinions with regard to its performance under any contract, agreement, or other business arrangement, its ability to perform, business reputation, and any other matter pertinent to the evaluation of the Respondent's Proposal. The Respondent hereby releases, acquits and forever discharges any such person or entity and their officers, directors, employees and agents from any and all liability whatsoever, including all claims, demands and causes of action of every nature and kind affecting the Respondent that it may have or ever claim to have relating to information, data, opinions, and references supplied to the Agency or the Evaluation Committee in the evaluation and selection of a successful Respondent in response to RFP.

A photocopy or facsimile of this signed Authorization is as valid as an original.

Sincerely,

Signature

Dexter Turner, CEO

Name and Title of Authorized Representative

8/5/2009

Date

Attachment #3 Form 22 – Request for Confidentiality

SUBMISSION OF THIS FORM 22 IS REQUIRED

THIS FORM 22 (FORM) MUST BE COMPLETED AND INCLUDED WITH YOUR PROPOSAL. THIS FORM 22 IS REQUIRED WHETHER THE PROPOSAL DOES OR DOES NOT CONTAIN INFORMATION FOR WHICH CONFIDENTIAL TREATMENT WILL BE REQUESTED. FAILURE TO SUBMIT A COMPLETED FORM 22 WILL RESULT IN THE PROPOSAL TO BE CONSIDERED NON-RESPONSIVE AND ELIMINATED FROM EVALUATION. COMPLETE PART 1 OF THIS FORM 22 IF PROPOSAL DOES NOT CONTAIN CONFIDENTIAL INFORMATION. COMPLETE PART 2 OF THIS FORM 22 IF PROPOSAL DOES CONTAIN CONFIDENTIAL INFORMATION.

1. **Confidential Treatment is Not Requested**
   A Respondent not requesting confidential treatment of information contained in its Proposal shall complete Part 1 of Form 22 and submit a signed Form 22 Part 1 with the Proposal.

2. **Confidential Treatment of Information is Requested**
   A Respondent requesting confidential treatment of specific information shall: (1) fully complete and sign Part 2 of Form 22, (2) conspicuously mark the outside of its Proposal as containing confidential information, (3) mark each page upon which the Respondent believes confidential information appears **and CLEARLY IDENTIFY EACH ITEM for which confidential treatment is requested; MARKING A PAGE IN THE PAGE MARGIN IS NOT SUFFICIENT IDENTIFICATION**, and (4) submit a "Public Copy" from which the confidential information has been excised.

   Form 22 will not be considered fully complete unless, for each confidentiality request, the Respondent: (1) enumerates the specific grounds in Iowa Code Chapter 22 or other applicable law that supports treatment of the information as confidential, (2) justifies why the information should be maintained in confidence, (3) explains why disclosure of the information would not be in the best interest of the public, and (4) sets forth the name, address, telephone, and e-mail for the person authorized by Respondent to respond to inquiries by the Agency concerning the confidential status of such information.

   The Public Copy from which confidential information has been excised is in addition to the number of copies requested in Section 3 of this RFP. The confidential information must be excised in such a way as to allow the public to determine the general nature of the information removed and to retain as much of the Proposal as possible.

   Failure to request information be treated as confidential as specified herein shall relieve Agency and State personnel from any responsibility for maintaining the information in confidence. Respondents may not request confidential treatment with respect to pricing information and transmittal letters. A Respondent's request for confidentiality that does not comply with this form or a Respondent's request for confidentiality on information or material that cannot be held in confidence as set forth herein are grounds for rejecting Respondent's Proposal as non-responsive. Requests to maintain an entire Proposal as confidential will be rejected as non-responsive.

   If Agency receives a request for information that Respondent has marked as confidential and if a judicial or administrative proceeding is initiated to compel the release of such information, Respondent shall, at its sole expense, appear in such action and defend its request for confidentiality. If Respondent fails to do so, Agency may release the information or material with or without providing advance notice to Respondent and with or

without affording Respondent the opportunity to obtain an order restraining its release from a court possessing competent jurisdiction. Additionally, if Respondent fails to comply with the request process set forth herein, if Respondent's request for confidentiality is unreasonable, or if Respondent rescinds its request for confidential treatment, Agency may release such information or material with or without providing advance notice to Respondent and with or without affording Respondent the opportunity to obtain an order restraining its release from a court possessing competent jurisdiction.

Part 1 – No Confidential Information Provided

Confidential Treatment Is Not Requested

Respondent acknowledges that proposal response contains no confidential, secret, privileged, or proprietary information. There is no request for confidential treatment of information contained in this proposal response.

This Form must be signed by the individual who signed the Respondent's Proposal. The Respondent shall place this Form completed and signed in its Proposal.

Fill in and sign the following if you have provided no confidential information. If signing this Part 1, do not complete Part 2.

OpConnect, Inc.	1119005053	EV Charging Stations
Company	RFP Number	RFP Title
Signature (required)	CEO Title	8/9/2019 Date

(Proceed to the next page only if Confidential Treatment is requested.)

Part 2 - Confidential Treatment is Requested

The below information is to be completed and signed ONLY if Respondent is requesting confidential treatment of any information submitted in its Proposal.

NOTE:

- ***Completion of this Form is the sole means of requesting confidential treatment.***
- ***A RESPONDENT MAY NOT REQUEST PRICING INFORMATION IN PROPOSALS BE HELD IN CONFIDENCE.***

Completion of the Form and Agency's acceptance of Respondent's submission does not guarantee the agency will grant Respondent's request for confidentiality. The Agency may reject Respondent's Proposal entirely in the event Respondent requests confidentiality and does not submit a fully completed Form or requests confidentiality for portions of its Proposal that are improper under the RFP.

Please provide the information in the table below. Respondent may add additional lines if necessary or add additional pages using the same format as the table below.

RFP Section:	Respondent must cite the specific grounds in *Iowa Code Chapter 22* or other applicable law which supports treatment of the information as confidential.	Respondent must justify why the information should be kept in confidence.	Respondent must explain why disclosure of the information would not be in the best interest of the public.	Respondent must provide the name, address, telephone, and email for the person at Respondent's organization authorized to respond to inquiries by the Agency concerning the status of confidential information.

This Form must be signed by the individual who signed the Respondent's Proposal. The Respondent shall place this Form completed and signed in its Proposal. A copy of this document shall be placed in all Proposals submitted including the Public Copy.

- ***If confidentiality is requested, failure to provide the information required on this Form may result in rejection of Respondent's submittal to request confidentiality or rejection of the Proposal as being non-responsive.***

- ***Please note that this Form is to be completed and signed only if you are submitting a request for confidential treatment of any information submitted in your Proposal. If signing this Part 2, do not complete Part 1.***

Company	RFP Number	RFP Title
Signature (required)	Title	Date

ATTACHMENT #5

Payment Terms

Per *Iowa Code § 8A.514* the State of Iowa is allowed sixty (60) days to pay an invoice submitted by a vendor.

What discount will you give for payment in 15 days? 2%

What discount will you give for payment in 30 days? 1%

ATTACHMENT #6 REQUIRED FEDERAL CONTRACT CLAUSES

All contracts, including small purchases, awarded by recipients and their Contractors shall contain the procurement provisions as outlined below: These provisions are available on the following website. OMB: http://www.whitehouse.gov/omb/circulars_a110#48

OPCONNECT AGREES TO COMPLY WITH ALL OF THESE PROVISIONS

2 CFR 215.48 Equal Employment Opportunity

All contracts shall contain a provision requiring compliance with E.O. 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR, 1964-1965 Comp., p. 339), as amended by E.O. 11375,"Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 US.C. 276c)

All contracts and subgrants in excess of $2000 for construction or repair awarded by recipients and subrecipients shall include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C B74), as supplemented by Department of Labor regulations (29 CFR part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he is otherwise entitled. The recipient shall report all suspected or reported violations to the Federal awarding agency.

Davis-Bacon Act, as amended (40 U.S.C. 276a to a-7)

When required by Federal program legislation, all construction contracts awarded by the recipients and subrecipients of more than $2000 shall include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 276a to a-7) and as supplemented by Department of Labor regulations (29 CFR part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction"). Under this Act, contractors shall be required to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor. In addition, contractors shall be required to pay wages not less than once a week. The recipient shall place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation and the award of a contract shall be conditioned upon the acceptance of the wage determination. The recipient shall report all suspected or reported violations to the Federal awarding agency. This does not apply to Federal disaster funding unless otherwise specified by local regulations.

Contract Work Hours and Safety Standards Act (40 U.S.C 327-333)

Where applicable, all contracts awarded by recipients in excess of $2000 for construction contracts and

in excess of $2500 for other contracts that involve the employment of mechanics or laborers shall include a provision for compliance with sections 102 and 107 of the Contract Work Hours and Safety **Standards Act (40 U.S.C. 327-333), as supplemented by Department of Labor regulations (29 CFR part 5).**

Under section 102 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work In excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than 1 ½ times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

Rights to Inventions Made Under a Contract or Agreement

Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention In accordance with 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.) as amended

Contracts and subgrants of amounts in excess of $100,000 shall contain a provision that requires the recipient to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.).

Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.5.C.

1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

Debarment and Suspension (E.O.s 12549 and 12689)

A contract award with an amount expected to equal or exceed $25,000 and certain other contract awards (see 2 CFR 180.220) shall not be made to parties listed on the government-wide Excluded Parties List System, in accordance with the OMB guidelines at 2 CFR part 180 that Implement E.O.s 12549 (3 CFR, 1986 Comp., p. 189) and 12689 (3 CFR, 1989 Comp., p. 235), "Debarment and Suspension." The Excluded Parties List System contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than E.O. 12549. [69 FR 26281, May 11, 2004, as amended at 70 FR 51879, Aug. 31, 2005]

OpConnect, Inc.

I have read and agree to comply with all of the Federal requirements contained in Attachment #6.

Signature

8/9/2019
Date

Dexter Turner
Printed Name

ATTACHMENT #7 List of Charging Station Models and Their Applications

The following table lists the Level 2 chargers that OpConnect is proposing and their primary feature set and uses:

Charger Model	Features	Application or Uses
HCS-40	• Made in the USA • Simple robust design with proven reliability & durability • 32amps of charging power delivered to EV as opposed to 30 amps from competing models • Non-networked (dumb) charger with no data collection, access control, energy load balancing, demand response or revenue collection capability	• Fleet use where data collection and access control are never going to be required • Workplace use where data collection and analysis; or payment for use will never be required • Installations where available electric capacity will never need to be balanced and where response to electric utility demand response signals will not be required
HCS-40-N-C	• Made in the USA • Low-cost networked charger option • Simple robust design with proven reliability & durability • 32amps of charging power delivered to EV as opposed to 30 amps from competing models • Networked version of HCS-40 charger with cellular connection to back end • Access control and payment via smartphone app only • Data collection only mode for fleet operations – drivers only need to plug in • Ability for a group of chargers to self-balance the available electric power at the location for EV charging – allows more EV chargers to be installed without upgrading the property's electrical service	• Fleet use where data collection is currently or may be desirable • Workplace use where data collection and analysis; or payment for use will never be required • Facilities that want to offer mixed-use or control who can use the charger or who can use it when • Facilities where electric power for EV charging is limited and must be controlled or might need to be controlled as more EVs are added

Charger Model	Features	Application or Uses
	• Ability to respond to real-time demand response signals from electric utility • Ability to support mixed use. For example – employees charge during the day, then restricted to fleet vehicles only in evening/night	
HCS-40-N-B	• Made in the USA • Low-cost networked charger option • Simple robust design with proven reliability & durability • 32amps of charging power delivered to EV as opposed to 30 amps from competing models • Networked version of HCS-40 charger with Bluetooth connection to driver's smartphone (which communicates to back end) – significantly lower operating costs by eliminating cellular cost • Works in underground parking facilities WITHOUT the need to install cell repeaters or other connectivity • Access control and payment via smartphone app only • Ability for a group of chargers to self-balance the available electric power at the location for EV charging – allows more EV chargers to be installed without upgrading the property's electrical service • Ability to respond to scheduled demand response signals from electric utility • Ability to support mixed use. For example – employees charge during the day, then restricted to fleet vehicles only in evening/night	• Underground parking or locations with no cellular connectivity • Fleet use where data collection is currently or may be desirable • Workplace use where data collection and analysis; or payment for use will never be required • Facilities that want to offer mixed-use or control who can use the charger or who can use it when • Facilities where electric power for EV charging is limited and must be controlled or might need to be controlled as more EVs are added

Charger Model	Features	Application or Uses
HCS-50	• Made in the USA • Simple robust design with proven reliability & durability • 40amps of charging power delivered to EV as opposed to 30 amps from competing models • Non-networked (dumb) charger with no data collection, access control, energy load balancing, demand response or revenue collection capability Access control and payment via smartphone app only	• Fleet use where data collection and access control are never going to be required • Workplace use where data collection and analysis; or payment for use will never be required Installations where available electric capacity will never need to be balanced and where response to electric utility demand response signals will not be required
HCS-50-N-C	• Made in the USA • Low-cost networked charger option • Simple robust design with proven reliability & durability • 40amps of charging power delivered to EV as opposed to 30 amps from competing models • Networked version of HCS-40 charger with cellular connection to back end • Access control and payment via smartphone app only • Data collection only mode for fleet operations – drivers only need to plug in • Ability for a group of chargers to self-balance the available electric power at the location for EV charging – allows more EV chargers to be installed without upgrading the property's electrical service • Ability to respond to real-time demand response signals from electric utility Ability to support mixed use. For example – employees charge during the day, then restricted to fleet vehicles	• Fleet use where data collection is currently or may be desirable • Workplace use where data collection and analysis; or payment for use will never be required • Facilities that want to offer mixed-use or control who can use the charger or who can use it when • Facilities where electric power for EV charging is limited and must be controlled or might need to be controlled as more EVs are added

Charger Model	Features	Application or Uses
	only in evening/night	
HCS-50-N-B	• Made in the USA • Low-cost networked charger option • Simple robust design with proven reliability & durability • 40amps of charging power delivered to EV as opposed to 30 amps from competing models • Networked version of HCS-40 charger with Bluetooth connection to driver's smartphone (which communicates to back end) – significantly lower operating costs by eliminating cellular cost • Works in underground parking facilities WITHOUT the need to install cell repeaters or other connectivity • Access control and payment via smartphone app only • Ability for a group of chargers to self-balance the available electric power at the location for EV charging – allows more EV chargers to be installed without upgrading the property's electrical service • Ability to respond to scheduled demand response signals from electric utility • Ability to support mixed use. For example – employees charge during the day, then restricted to fleet vehicles only in evening/night	• Underground parking or locations with no cellular connectivity • Fleet use where data collection is currently or may be desirable • Workplace use where data collection and analysis; or payment for use will never be required • Facilities that want to offer mixed-use or control who can use the charger or who can use it when • Facilities where electric power for EV charging is limited and must be controlled or might need to be controlled as more EVs are added
CS-100	• Made in the USA • Simple robust design with proven reliability & durability • High power - 80 amps of output charging power • Non-networked (dumb) charger with	• Fleet use for higher power need vehicles such as school buses or delivery trucks • Fleet use where data collection and access control are never going to be required

Charger Model	Features	Application or Uses
	no data collection, access control, energy load balancing, demand response or revenue collection capability	• Installations where available electric capacity will never need to be balanced and where response to electric utility demand response signals will not be required
CS-100-N-C	• Made in the USA • Simple robust design with proven reliability & durability • High power - 80 amps of output charging power (highest power networked charger available in the market) • Networked version of CS-100 charger with cellular connection to back end • Access control via smartphone app only • Data collection only mode for fleet operations – drivers only need to plug in • Ability for a group of chargers to self-balance the available electric power at the location for EV charging – allows more EV chargers to be installed without upgrading the property's electrical service • Ability to respond to real-time demand response signals from electric utility	• Fleet use for higher power need vehicles such as school buses or delivery trucks • Fleet use where data collection is currently or may be desirable • Facilities where electric power for EV charging is limited and must be controlled or might need to be controlled as more EVs are added
L2X-30	• Made in the USA • Cellular connection to back end • Access control and payment via credit card, RFID or smartphone app • Ability to respond to real-time demand response signals from electric utility • Ability to support mixed use. For example – employees charge during the day, then restricted to fleet	• Installations where it is desirable to let users pay via credit card • Workplace use where data collection and analysis, or payment for use is desirable now or in the future • Facilities that want to offer mixed-use or control who can use the charger or who can

Charger Model	Features	Application or Uses
	vehicles only in evening/night	use it when
L2X-40	• Made in the USA • Cellular connection to back end • Higher 40amp output power • Access control and payment via credit card, RFID or smartphone app • Ability to respond to real-time demand response signals from electric utility • Ability to support mixed use. For example – employees charge during the day, then restricted to fleet vehicles only in evening/night	• Installations where it is desirable to let users pay via credit card • Workplace use where data collection and analysis, or payment for use is desirable now or in the future • Facilities that want to offer mixed-use or control who can use the charger or who can use it when

The following table lists the DC Fast chargers that OpConnect is proposing and their primary feature set and uses:

Charger Model	Features	Application or Uses
L3R-50-480-01	• Made in the USA • CHAdeMo and CCS1 connectors to serve all EV models • Cord management • 15” touchscreen LCD • RFID and credit card readers	• Fleet use where fast charging is required • Public fast charging with open access – take credit cards or OpConnect membership
High-Powered option has a separate power unit and dispenser EVP-FC200 (power enclosure) EVDSP-FC-350 (dispenser)	• Made in the USA • CHAdeMo and CCS1 connectors to serve all EV models • Dispenser can be purchased with minimum 50kW output and upgraded in 50kW increments to up to 350kW in the future. • One power management unit serves multiple dispensers • Small footprint of dispenser (install the power unit in hidden location if wanted) • 15” touchscreen LCD on dispenser • RFID and credit card readers	• Fleet use where fast charging is required • Higher power output (150kW today – up to 350kW in future) for transit buses • Public fast charging with open access – take credit cards or OpConnect membership

Attachment #8 Specifications and Installation Manuals

HCS-N Specification

Technical Specifications	
AC Power Input	208/240VAC, Single Phase (3 phase possible)
Amperage	HCS Models: 40A/50A/60A
Required Service Panel Breaker	40A/50A/60A, double pole, non-GFCI type on dedicated circuit
Output Charging Power	7.68kW (HCS-40N); 9.6kW (HCS-50N); 11.52kW (HCS-60N)
Charging Connector	SAE J1772, 25' cable (Note: 18' cable recommended with cord management)
Ground Fault Detection	Build-in, 5mA trip
Surge Protection	6kV @ 3000A - IEC 61000-4-4
Operating Temperature	-30°C to +50°C
Operating Humidity	90% RH, non-condensing
Enclosure	NEMA 4 – outdoor use; water tight
User Interface	Status Indicator LEDs, Smartphone App
Payment System/Access Control	OpConnect App for payment; Plug-N-Charge w/ data collection for fleet applications
Warranty	3 years parts only – Service plan to cover labor is available for purchase
Network	Wireless Cellular, Wired Ethernet or Bluetooth
Pedestal Mounting System	Capable of mounting two (2) Chargers per pedestal
Cord Management System	Reel based system for ADA compliance
Service Plans	Covers warranty labor, annual maintenance; on-site troubleshooting

Standard
Optional

Fleet Charging using our Bluetooth Charger

HCS-X0-NB Level 2 Charger – HOW IT WORKS

1 Driver's mobile device gets charger ID & status using Bluetooth connection

2 *(Function available soon) Driver enters mileage and vehicle ID into OpConnect app*

3 Driver's mobile device sends driver ID, charger ID & status to OpConnect server

4 OpConnect server records driver data and charger ID and returns authorization code & demand response schedule (if appropriate) to driver's mobile device

Note that if driver's phone does not have cellular connection (in underground garage for example), the app stores the charger ID and will send to server once gets cellular service

4 Driver's mobile device sends start session signal & demand response schedule to charger

5 Driver's mobile device instructs driver to plug in. Driver plugs in and leaves EV charging.

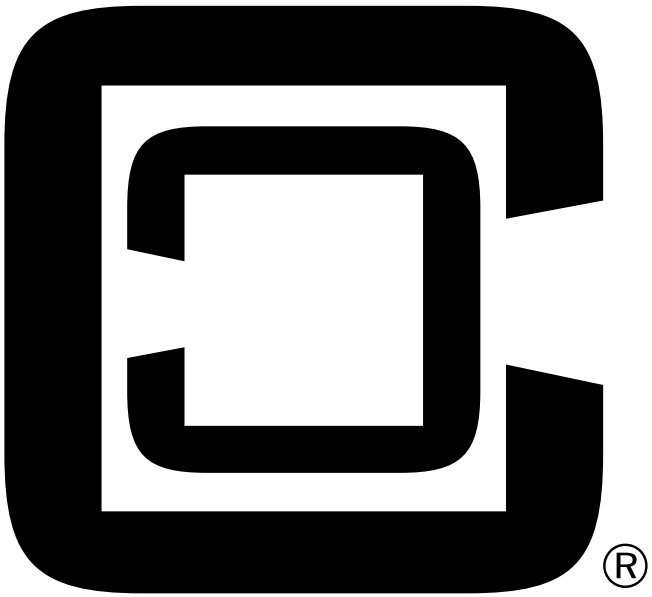
When A Driver Wants to use the EV

Driver's mobile device captures session data from charger when driver unplugs

Driver's mobile device sends session data to OpConnect when it has cellular service

ClipperCreek, Inc.

Innovative Infrastructure for Electric and Hybrid Vehicles



User's Manual

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Model HCS

PLEASE NOTE

This user's manual includes the latest information at the time of printing. ClipperCreek, Inc. reserves the right to make changes to this product without further notice. Changes or modifications to this product by other than an authorized service facility may void the product warranty.

If you have questions about the use of this product, contact your customer service representative. Refer to the Customer Support section located in this guide.

Please visit ClipperCreek's Website @ www.clippercreek.com

HCS User's Manual, Version 12.0, May 2017
HCS User's Manual 20170531.indd

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IMPORTANT SAFETY INSTRUCTIONS

Carefully read these instructions and the charging instructions in your vehicle owner's handbook before charging your electric vehicle.

The following symbols may be found in this manual or on labels affixed to the charge station:

NOTE *This means pay particular attention.* Notes contain helpful suggestions.

Cela signifie accorder une attention particulière. Les remarques contiennent des suggestions utiles.

CAUTION: *This symbol means be careful.* You are capable of doing something that might result in damage to equipment.

ATTENTION: *Ce symbole signifie être prudent.* Vous êtes capable de faire quelque chose qui pourrait causer des dommages à l'équipement.

WARNING: *This symbol means danger.* You are in a situation that could cause bodily injury. Before you work on any electrical equipment, be aware of the hazards involved with electrical circuitry and standard practices for preventing accidents.

AVERTISSEMENT: *Ce symbole signifie un danger.* Vous êtes dans une situation qui pourrait causer des blessures corporelles. Avant de travailler sur un équipement électrique, être conscient des dangers présentés par les circuits électriques et les pratiques courantes de prévention des accidents.

Instructions Pertaining to a Risk of Fire or Electric Shock

When using the the HCS, basic electrical safety precautions should be followed:

- Use this charge station to charge electric vehicles equipped with an *SAE-J1772™ charge port only*. Consult the vehicle owner's manual to determine if the vehicle is equipped with the correct charge port.
- Make certain the charge station *SAE-J1772™* charge cable is positioned so it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
- This product contains no user serviceable parts. Consult the Customer Support section in this manual for service information. Do not attempt to repair or service the charge station yourself.
- Do not operate your charge station if it or the *SAE-J1772™* charge cable is physically open, cracked, frayed, or otherwise visibly damaged. Contact your Service Representative for service immediately. Consult the Customer Support section in this manual for information on the Service Representative in your area.

- Not for use in commercial garages where a COMMERCIAL GARAGE is defined as a facility (or portion thereof) used for the repair of internal combustion vehicles in which the area may be classified due to flammable vapors being present (such as from gasoline.)

- Do not place fingers inside of the coupler end of the *SAE-J1772™* charge cable.

- Do not allow children to operate this device. Adult supervision is mandatory when children are in proximity to a charge station that is in use.

Instructions se Rapportant à un Risque d'Incendie ou de Choc Électrique

Lorsque l'utilisation de la HCS, précautions fondamentale de sécurité électrique doivent être suivies:

- Utilisez cette station de recharge pour charger les véhicules électriques équipés d'un *SAE-J1772™* port de recharge seulement. Consultez le manuel du propriétaire du véhicule afin de déterminer si le véhicule est équipé d'un correcte port de recharge.

- Assurez-vous que le *SAE-J1772™* câble de recharge sur la station de recharge est positionné de telle sorte qu'il ne sera pas piétiné, accroché plus de, ou autrement endommagé ou de subir le stress.

- Ce produit ne contient aucune pièce réparable par l'utilisateur. Consultez la section Support à la Clientèle dans ce manuel pour obtenir des informations de service. N'essayez pas de réparer ou d'entretenir la station de recharge vous-même.

- Ne faites pas fonctionner votre station ou le câble de recharge si elles sont physiquement ouverte, fissuré, effiloché, ou autrement visiblement endommagé. Contactez votre représentant du service pour service immédiatement. Consultez la section Support à la clientèle dans ce manuel pour obtenir des informations sur le représentant du service dans votre région.

- Ne pas utiliser dans les garages commerciaux où un garage commercial est défini comme une installation (ou une partie) utilisé pour la réparation de véhicules à combustion interne dans lequel la zone peut être classée en raison de vapeurs inflammables étant présents (Tels que de l'essence.)

- Ne posez pas les doigts à l'intérieur de l'extrémité du *SAE-J1772™* coupleur du câble de recharge.

- Ne pas laisser les enfants utiliser cet appareil. Supervision d'un adulte est obligatoire lorsque des enfants sont à proximité d'une station de recharge qui est en cours d'utilisation.

ADDITIONAL SAFETY INFORMATION

WARNING: Turn off input power to your charge station at the circuit breaker panel before servicing or cleaning the unit.

AVERTISSEMENT: Couper l'alimentation d'entrée à votre station de recharge sur le panneau de disjoncteur avant de nettoyer ou de réparer l'appareil.

NOTE VENTILATION: Some electric vehicles require an external ventilation system to prevent the accumulation of hazardous or explosive gases when charging indoors. Consult the vehicle owner's manual to determine if your vehicle requires ventilation during indoor charging.

VENTILATION: Certains véhicules électriques nécessitent un système de ventilation externe pour éviter l'accumulation de gaz explosifs ou dangereux lors de la charge à l'intérieur. Consultez le manuel du propriétaire du véhicule pour déterminer si votre véhicule nécessite une ventilation quand le recharge en salle.

NOTE Vehicles which conform to the *SAE-J1772™* standard for communication can inform the charge station that they require an exhaust fan. The HCS is not equipped to control ventilation fans. Do not charge the vehicle with the HCS if ventilation is required.

Véhicules qui sont conformes à la norme *SAE-J1772™* de communication peuvent informer la station de recharge qu'ils nécessitent un ventilateur d'extraction. Le HCS n'est pas équipé pour contrôler les ventilateurs. Ne chargez pas le véhicule avec les HCS si la ventilation est nécessaire.

CAUTION: DO NOT CHARGE a vehicle indoors if it requires ventilation. Contact your Service Representative for information.

ATTENTION: NE PAS RECHARGER un véhicule à l'intérieur si il nécessite une ventilation. Contactez votre représentant de service pour plus d'informations.

Save these instructions for future reference.

Conservez ces instructions pour référence future.

FCC INFORMATION

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This product has been designed to protect against Radio Frequency Interference (RFI). However there are some instances where high powered radio signals or nearby RF-producing equipment (such as digital phones, RF communications equipment, etc.) could affect operation.

If interference to your charge station is suspected, we suggest the following steps be taken before consulting your ClipperCreek Sales and Service Representative for assistance:

1. Reorient or relocate nearby electrical appliances or equipment during charging.

2. Turn off nearby electrical appliances or equipment during charging.

CAUTION: Changes or modifications to this product by other than an authorized service facility may void FCC compliance.

ATTENTION: Modifications apportées à ce produit par qui conque autre qu'un centre de service autorisé peut annuler la conformité FCC.

OPERATION

The HCS Electric Vehicle Charging Station is a compact wall or pedestal-mounted charging station that provides the Plug-in Hybrid or Battery Electric Vehicle (together Plug-In Electric Vehicles, or "PEV") user with a safe and manageable link between the power grid and the PEV. Both hardwired (HCS) and NEMA plug-equipped (HCS-P) versions are available.

The HCS is very easy to use. Just unwrap the *SAE-J1772™* charge cable and plug the charge coupler firmly into the vehicle's charge port.

Normally, the vehicle will immediately request a charge using a special communication line in the cable. Within a few seconds the green "Charging" light on the face of the HCS will turn on and the charging cycle will begin. After an average driving day the vehicle battery pack will require several hours to recharge completely. Charging overnight is the most convenient way to maintain healthy batteries and ensure the vehicle's full range will be available for the next day.

When the vehicle has stopped charging the green "Charging" light on the HCS will turn off. To remove the charge coupler once a charge cycle has completed (or to interrupt a charge in progress) press and hold down the latch release lever on the charge coupler handle then unplug the charge coupler from the vehicle charge port.

THE HCS FRONT PANEL

Figure 1. Front Panel

The front panel on the HCS has four indicator lights, as shown in Figure 1:

POWER (yellow), indicates that power is available to the HCS.

CHARGING (green), indicates that the vehicle is requesting a charge and AC power is currently applied to the vehicle.

POWER FAULT (red), indicates that the HCS is not wired correctly. The problem can be due to improper grounding or a missing Earth Ground. The wiring should be examined by a qualified electrician.

CHARGING FAULT (red), indicates that the HCS is unable to communicate with the vehicle correctly, or a safety fault condition has been detected by the unit.

Table 1. Front Panel LED Information

#	Amber Power LED	Green Charging LED	Red Power Fault LED	Red Charging Fault LED	Fault Condition
1	off	off	off	off	No power to EVSE. Check circuit breaker.
2	ON	off	off	off	Not plugged into the EV or the EV is not ready to charge.
3	ON	ON	off	off	Charging enabled, power is applied to the vehicle
4	ON	off	ON – not blinking	off	Improper grounding or ground is not present.
5	ON	off	off	ON – not blinking	Problem with EV communications. Disconnect and restart.
6	ON	off	off	blinking	EV ground fault trip. Check vehicle connection.
7	ON	off	blinking	blinking	Internal EVSE fault. Call for service.

INSTALLATION
SERVICE CONNECTIONS

CAUTION: To reduce the risk of fire, connect only to a circuit providedwith the appropriate maximum branch circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70 (US) or the Canadian Electric Code C22.2 NO. 280-13 (Canada).

ATTENTION: Pour réduire le risque d'incendie, de se connecter uniquement à un circuit fourni avec le approprié circuit de dérivation protection maximale contre les surintensités, en conformité avec le Code National électrique ANSI/NFPA 70 (US) ou Code Canadien de l'électricité C22.2 NO. 280-13 (Canada).

HCS Model HCS Modèle		Circuit Breaker Rating Calibre de Disjoncteur	Receptacle Type Prise Électrique
HCS-15	(Hardwired)	15A	n/a
HCS-20	(Hardwired)	20A	n/a
HCS-25	(Hardwired)	25A	n/a
HCS-30	(Hardwired)	30A	n/a
HCS-40	(Hardwired)	40A	n/a
HCS-40P+	NEMA 6-50P	40A/50A	NEMA 6-50R
HCS-40P+	NEMA 14-50P	40A/50A	NEMA 14-50R
HCS-50	(Hardwired)	50A	n/a
HCS-50P+	NEMA 6-50P	50A	NEMA 6-50R
HCS-50P+	NEMA 14-50P	50A	NEMA 14-50R
HCS-60	(Hardwired)	60A	n/a

CAUTION: <u>This is a single-phase device. Do not connect all three phases of a 3-phase feed !!!</u> You may use any two phases of a three phase wye-transformer feed. The center-point of the three phases (usually used as Neutral) must be grounded somewhere in the system. A Neutral connection is not required by the HCS. Only Line 1, Line 2, and Ground are required, as shown in Figure 3.

ATTENTION: <u>Il s'agit d'un appareil monophasé. Ne pas relier tous les trois phases d'une alimentation triphasée!!!</u> Vous pouvez utiliser les deux phases d'un triphasé en étoile transformateur alimentation. Le point central des triphasé (généralement utilisé comme Neutre) doit être mis à la terre quelque part dans le système. Une connexion Neutre n'est pas exigée par la HCS. Seulement ligne 1, ligne 2, et Mise à la Terre sont nécessaires, comme le montre la Figure 3.

CAUTION: The two phases used must each measure 120V to Neutral. Earth Ground must be connected to Neutral at only one point, usually at the service entry breaker panel.

ATTENTION: Les deux phases utilisées doivent mesurer chaque 120V à Neutre. Mise à la terre doit être connecté au Neutre en un seul point, généralement à l'entrée panneau de disjoncteurs de service.

CAUTION: If a 240V 3-phase feed is from a Delta-connected secondary,the leg used must have a center-tap. That tap must be Grounded. Only the two phases on either side of the center-tapped leg can be used. See Figure 4 on page 13.

ATTENTION: Si une alimentation à triphasé 240V provient d'un triangle connecté secondaire, la bornes utilisée doit avoir un centre-tap. Que la tap doit être Mise à la Terre. Seuls les deux phases l'une ou l'autre côté du centre tapped brancher peut être utilisé. Voir la Figure 4 ci-dessous.

CAUTION: **Warranty is void if this unit is not wired properly**

ATTENTION: **La garantie est annulée si cette unité n'est pas correctement câblé**

WARNING: Only a qualified electrician should perform the installation. The installation must be performed in accordance with all local electrical codes and ordinances.

AVERTISSEMENT: Seul un électricien qualifié doit effectuer l'installation. L'installation doit être effectuée conformément à tous les codes électriques locaux et des ordonnances.

Only 3 wires are connected, but care must be taken that the service transformer secondary connection is definitely known, and the 3 wires from the main circuit breaker panel are connected and labeled correctly. Figures 2, 3, and 4 below show the most common service transformer secondary wiring formats.

Notice that L1, L2, & Ground are labeled on each diagram. Those transformer outputs correspond to the same inputs on the HCS. Also, each of the two 3-phase diagrams shows an L3 output, which is not used. Do not connect all three phases of a 3-phase secondary to the HCS. This is a single-phase device.

The Neutral at the service panel *must* be connected to Earth Ground *somewhere* in the system on *any* of the three connection arrangements. Ground-fault protection is not possible unless the Neutral (center-tap on the service transformer) is connected to an Earth Ground. If no Ground is provided by the electrical service, a grounding stake must be driven into the Ground nearby, following local electrical codes. The grounding stake must be connected to the ground bar in the main breaker panel, and Neutral connected to Ground at that point.

WARNING: Local electrical codes must always be followed when installing the grounding stake.

AVERTISSEMENT: Les codes électriques locaux doivent toujours être respectées lors de l'installation du piquet de mise à la terre.

The following diagrams illustrate the three service transformer secondary connections most common in North America.

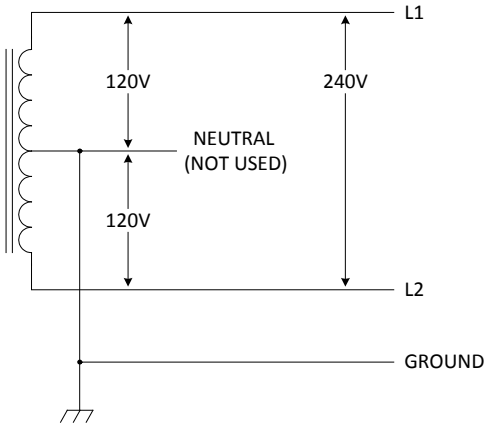


Figure 2 - 220/240V Single Phase

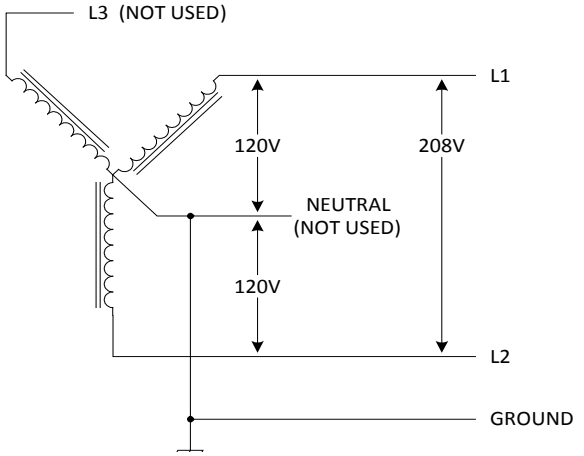
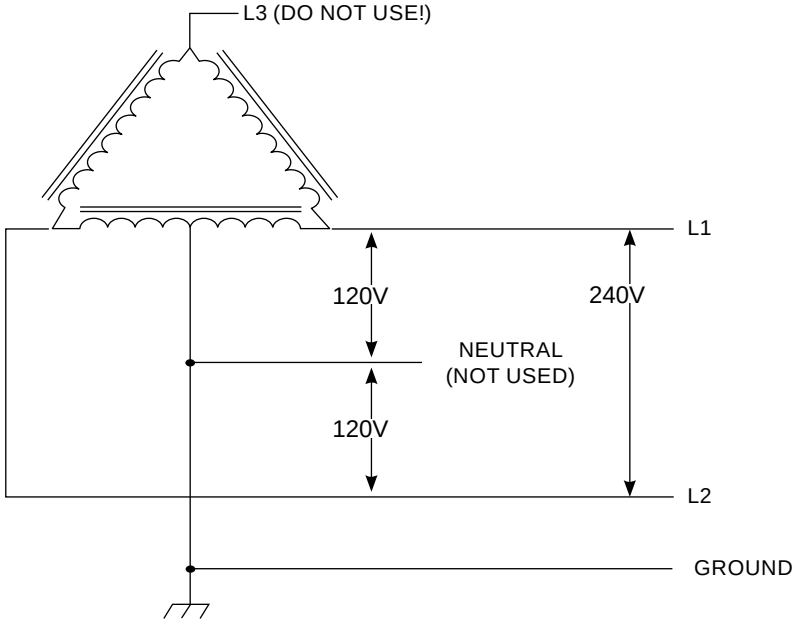


Figure 3 - 208V 3-Phase, Wye-Connected

NOTE With a wye-connected secondary, any two of the legs can be used to provide 208V to the HCS. For example, L1 & L2, or L1 & L3, or L2 & L3. Leave the unused leg open. Do not connect it to a Neutral bar, or to Ground. Be sure the center point is grounded to Earth somewhere in the system.

Avec un transformateur étoile-connecté secondaire, deux des lignes peut être utilisé pour fournir 208V à la HCS. Par exemple , L1 & L2, ou L1 & L3, ou L2 & L3. Laissez la borne inutilisée ouverte. Ne le connectez pas à un bar Neutre, ou à la Mise à la Terre. Assurez-vous que le point central est Mis à la Terre quelque part dans le système.

Figure 4 - 240V 3-Phase, Delta-Connected, with center-tap on one leg



CAUTION: With the delta connection, one leg *must* be center-tapped. *Only* the two phases on either side of the center tap can be used. The two phases must *both* measure 120V to Neutral. The third line (L3) of the delta is 208V, with respect to Neutral, and is sometimes referred to as a "stinger". ***Do not use this third line!*** Consult the transformer manufacturer's literature to be sure the single leg can supply the required power.

ATTENTION: Avec la connexion triangle, une borne doit être centre-tapped, et seulement les deux phases d'un côté ou de l'autre du centre tap peut être utilisé. Les deux phases doivent mesurer 120V à Neutre. Ta troisième ligne (L3) du delta est 208V, par rapport à la position Neutre, et il est parfois désigné comme un "stinger". ***Ne pas utiliser ce troisième ligne!*** Consultez la documentation du transformateur fabricant pour être sûr du borne unique peut fournir la puissance requise.

CAUTION: A 3-phase delta-connected transformer secondary without a center-tap on one leg *cannot be used with the HCS*. No "Neutral" point is available to be connected to ground for ground-fault protection. The HCS will not allow the contactor to close if it does not sense the presence of a Ground wire connected to a "Neutral" point on the transformer secondary.

ATTENTION: Un triphasé triangle-connecté transformateur secondaire sans centre-tap sur le terminal ne peut pas être utilisé avec la HCS. Aucun point "Neutre" est disponible pour être connecté à Mise à la Terre pour protection de défaut à la terre. Le HCS ne permettra pas le contacteur de fermer si elle ne détecte pas la présence d'un fil de Masse connecté à un point "Neutre" sur le secondaire du transformateur.

MOUNTING PROCEDURES

Locate the wall mounting position of the EVSE:

- On the hardwired HCS, the three service conductors are shielded by three feet of flexible conduit. The HCS must be positioned such that this conduit can reach a nearby junction box.
- On the plug-in HCS-P, the NEMA plug head is connected by one foot of cable (including the plug head) to the bottom side of the HCS-P. The HCS-P must be positioned such that this plug can safely be inserted into a wall-mounted NEMA socket.
- Position the bottom of the charge station at a comfortable height and at least 18 inches above the ground for indoor installations and 24" off the ground for outdoor installations. Ensure that the LEDs on the front panel of the EVSE can clearly be seen by anyone who will be operating the device.
- The HCS has two vertically aligned mounting holes spaced 17" apart, one each on the enclosure top and bottom. Use a ruler or template to mark hole locations on the mounting surface.

WARNING: For safety, always turn off input power to the charge station at the circuit breaker panel prior to plugging it in or wiring it to the service lines Likewise, turn off the circuit breaker prior to unplugging it or disconnecting the unit from the service lines.

AVERTISSEMENT: Pour sécurité, toujours désactiver le courant d'entrée de la station de recharge au niveau du disjoncteur du panneau avant de le brancher ou de câblage à les lignes de service. De même, coupez le disjoncteur avant de le débrancher ou déconnecter l'unité à partir des lignes de services.

FOR HOLLOW-WALL CONSTRUCTION

- Place the unit such that both mounting holes can take advantage of solid structural framing inside of the wall or a strong wall surface such as plywood.

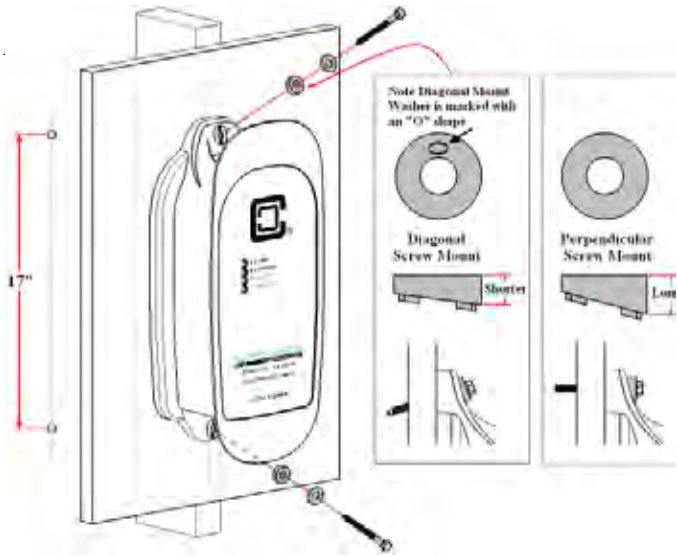
- Size ¼"-20 lag screws are recommended for mounting the HCS to a wooden structure. Pre-drill appropriately sized pilot holes to allow the lag screw to grip the wooden structure while preventing the wood from cracking or splintering while the screw is fastened.

- The included plastic angle washers can be oriented to allow the lag screws to be fastened at an angle while still providing a solid flat backing to the screw head.

- If the screw head is smaller than the ⅜" washer aperture, an additional flat washer will need to be placed between the plastic angle washer and the head of the lag screw.

- If either mounting hole does not have a solid mounting structure (such as drywall without a solid backing) it will be necessary to use proper anchoring hardware such as drywall toggles or molly bolts.

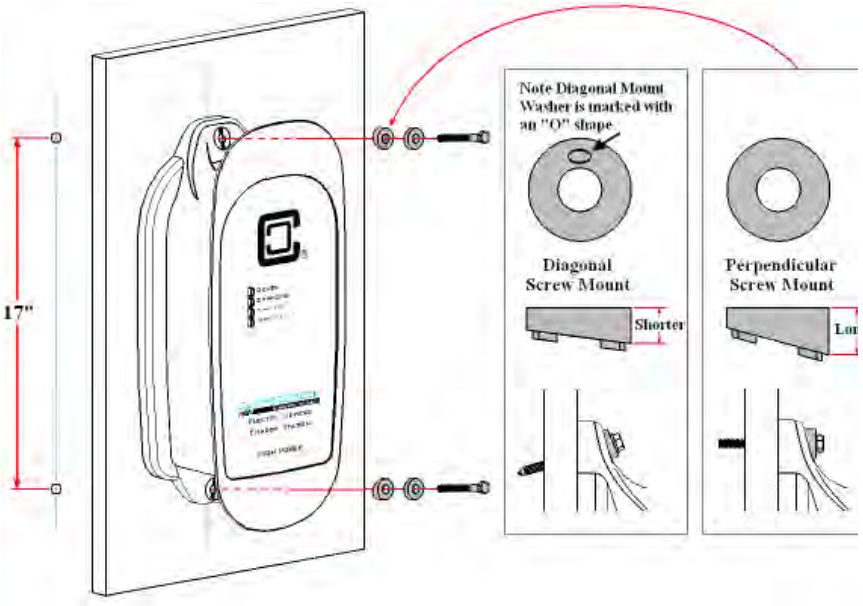
Figure 5. Mounting the HCS to a hollow wall



FOR SOLID-WALL CONSTRUCTION

- To secure the unit in concrete, pre-drill appropriately sized holes and use multi-set or wedge anchor hardware at both mounting points.
- To secure the unit in brick or stone, pre-drill appropriately sized holes and use sleeve anchors at both mounting points.
- The included plastic angle washers can be oriented to allow bolts to be fastened either at an angle or perpendicular to the mounting surface. Note there are two different sets of plastic angle washers included. Select those washers that best accomodate the mounting hardware "angle of attack" and orient them accordingly.
- Note that if the head of the mounting hardware is smaller than the ⅜" plastic angle washer aperture, an additional flat washer will need to be placed between the plastic angle washer and the mounting hardware.
- Machine screw size ¼"-20 hardware is recommended for mounting the HCS.Screw shafts of at least 2" are recommended. The HCS plastic angle washer hole size is ⅜" in diameter, so ensure that the screw heads are of a larger diameter. Place appropriately sized washers between the screw heads and the HCS enclosure mounting flanges.

Figure 6. Mounting the HCS to a solid wall

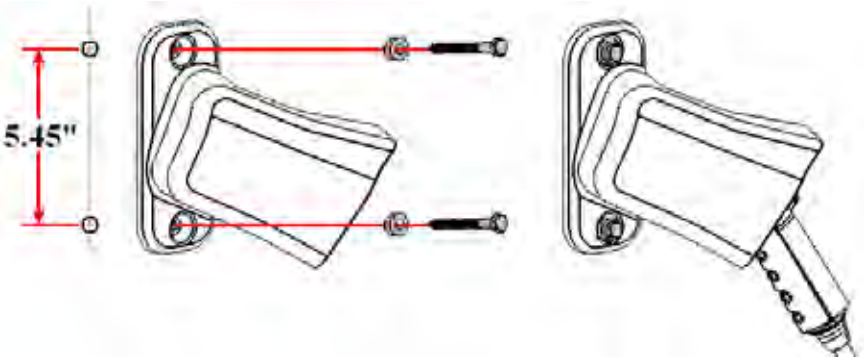


MOUNTING THE *SAE-J1772™* CONNECTOR HOLSTER

The SAE-J1772™ connector holster is included to provide a convenient protective housing for the the SAE-J1772™ connector head when it is not in use.

- The *SAE-J1772™* connector holster should be placed so that users have easy and safe access to the *SAE-J1772™* connector.
- For indoor installation, mount the *SAE-J1772™* connector holster between 18 and 48 inches above the ground or grade.
- For outdoor installation, mount the *SAE-J1772™* connector holster between 24 and 48 inches above the ground or grade.
- The *SAE-J1772™* connector holster has two vertically aligned mounting holes spaced 5.45" apart, one each on the enclosure top and bottom. Use a ruler or template to mark hole locations on the mounting surface.
- The vertical alignment of the HCS and *SAE-J1772™* connector holster mounting holes allows for the convenient mounting of both components onto the same post or wall structure. For example, the holster may be mounted directly above the HCS.
- Place the *SAE-J1772™* connector holster such that both mounting holes can take advantage of solid structural framing inside of the wall or a strong wall surface such as plywood.
- A set of exterior wood screws and stainless steel washers are included for the purposes of mounting the *SAE-J1772™* connector holster to a wooden surface.
- For mounting to a solid surface such as concrete, brick, or stone, alternate hardware may need to be procured. Examples of solid-wall mounting hardware include muti-sets, wedge anchors and sleeve anchors. Use the type of mounting hardware most appropriate for the supporting structure.

Figure 7. Mounting the holster using the exterior wood screws and washers



WIRING INSTRUCTIONS (Hardwired HCS)

Route the HCS conduit to a nearby junction box. Use the included ½" trade size watertight conduit fitting and sealing washer to provide a moisture-resistant seal between the conduit fitting and the junction box. If necessary, drill a ⅞"diameter hole to accommodate the conduit fitting. For outdoor installations ensure the junction box is fully sealed using appropriate electrical grade silicone sealant.

Before connecting the HCS service conductors, please carefully read the section of this manual titled **Service Connections** on page 10. If you are unsure of the type of power provided at the service panel, please consult with your local utility or call your Service Representative for assistance.

Figure 8. Wiring the HCS in a junction box

The three supplied HCS-15, 20, 25, 30 or 40 service conductors use stranded 10 AWG 90ºC copper wire. The three supplied HCS-50, and HCS-60 service conductors use stranded 8 AWG, 90ºC copper wire.

The insulation of each conductor is color coded for standard 240V AC installation:

Green: Ground
Black: Line 1 (120V AC to Ground)
Red: Line 2 (120V AC to Ground)

Les trois HCS-15, 20, 25, 30 un HCS-40 service conducteurs fournis utilisent bloqués câble en cuivre 10 AWG 90ºC.

Les trois HCS-50 fournis et conducteurs HCS-60 utilisent des services bloqués 8 fil de cuivre AWG, 90ºC.

L'isolation de chaque conducteur est un code couleur pour l'installation de 240VAC norme:

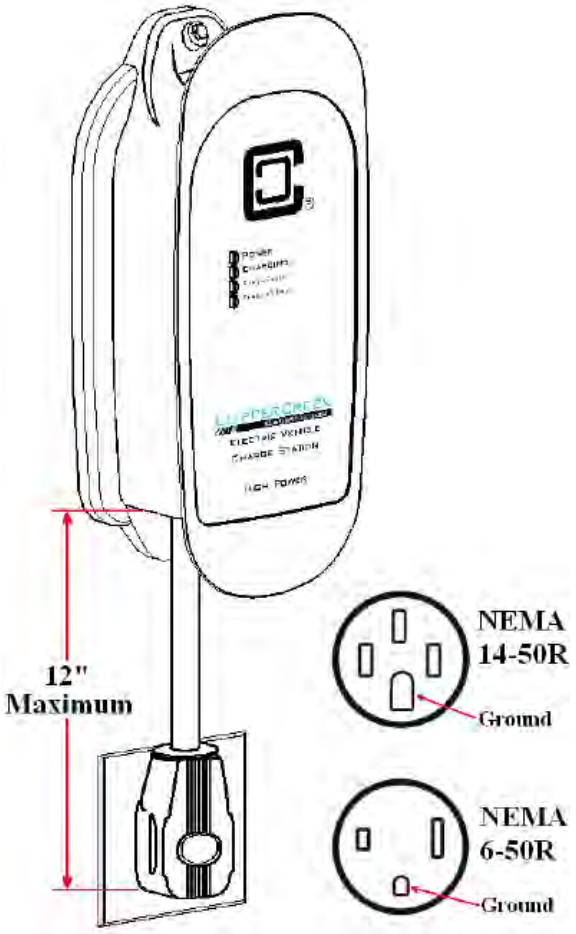
Vert: Mise à la Terre
Noir: Ligne 1 (120V AC à Mise à la Terre)
Rouge: Ligne 2 (120V AC à Mise à la Terre)

RECEPTACLE INSTRUCTIONS (Plug-In HCS-P)

The HCS-P is fitted with either a NEMA 14-50P or 6-50P plug extending from the bottom of the HCS enclosure. Regulations limit this plug to a maximum of 12 inches in length, including the plug head. For this reason, the HCS-P must be mounted above the NEMA receptacle and must also be located within 12 inches of it.

In both NEMA 14-50P and 6-50P configurations, the ground pin is located at the furthest point on the plug. With this in mind, it is recommended that a NEMA 14- 50R or 6-50R receptacle be oriented accordingly, such that the ground socket is at the lowest point.

Figure 9. Preferred orientation of the NEMA receptacles below the HCS-P

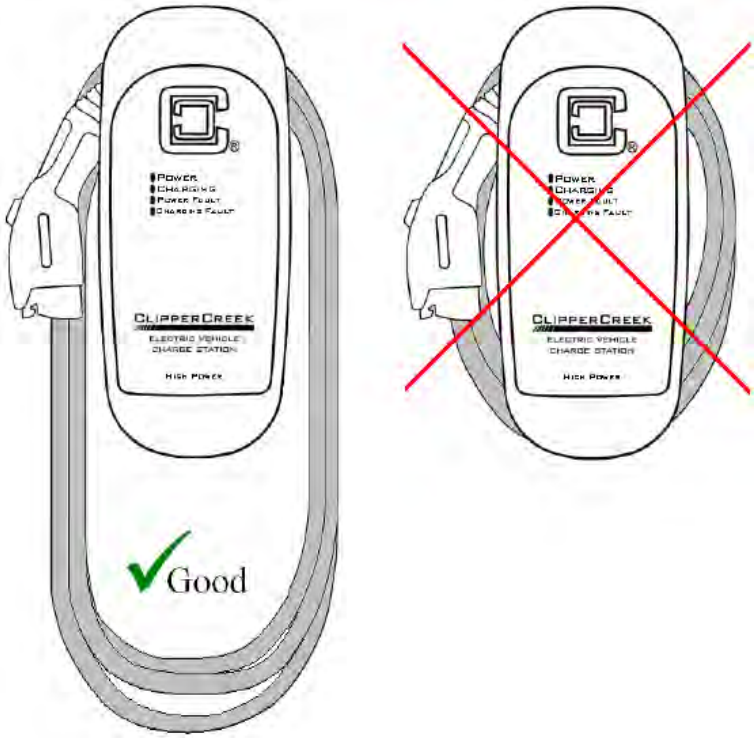


CHARGE CABLE WRAP GUIDELINES

The HCS enclosure body is sculpted to allow the charge cable to be wrapped around it for convenient storage as well as to keep the bulk of the cable off of the ground and out of the way. As the charge cable is comprised of a number of wires, coiling the charge cable too tightly around the HCS enclosure will result in the charge cable feeling warmer to the touch than would ordinarily be the case.

To minimize this effect, it is recommended that the charge cable be loosely draped around the HCS enclosure body with larger loops. This will also permit greater convenience in "pulling off" additional loops if a longer charge cable reach is desired.

Figure 10. Drape the charge cable loosely around the HCS enclosure



GROUNDING INSTRUCTIONS

This product must be grounded. If this product should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

For the hardwired HCS:

The hardwired HCS is equipped with three service conductors shielded by three feet of flexible conduit. This product must be connected to a grounded, metal, permanent wiring system, or an equipment-grounding conductor must be run with the circuit conductors and connected to the ground lead on the product.

For the plug-in HCS-P:

The plug-in HCS-P is equipped with a cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING: Improper connection of the equipment-grounding conductor may result in a risk of electric shock. Check with a qualified electrician if doubt exists as to whether the product is properly grounded. Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

AVERTISSEMENT: Une mauvaise connexion du conducteur de terre peut entraîner un risque de choc électrique. Vérifier avec un électricien qualifié si il existe un doute quant à savoir si le produit est correctement mis à la terre. Ne pas modifier la fiche fournie avec le produit – si elle n'entre pas dans la prise, faites installer une prise adéquate par un électricien qualifié.

MOVING & STORAGE INSTRUCTIONS

Note that both the hardwired HCS and the plug-in HCS-P are intended for fixed installations. For mounting requirements, consult the **Mounting Procedures** section of the **Installation Instructions** in this manual.

Aways turn off input power to the charge station at the circuit breaker panel prior to hard-wiring an HCS to or disconnecting an HCS from the service lines. Likewise, always turn off input power to the charge station at the circuit breaker panel prior to plugging an HCS-P into or unplugging an HCS-P from a NEMA socket.

When transporting the charge station, do not lift or carry the entire unit by the *SAE-J1772™* charge cord. Likewise, do not lift or carry the entire unit by the flexible conduit and input conductors (HCS) or the NEMA plug (HCS-P).

The charge station has a non-operational storage temperature range of -40°C to +80°C (-40°F to +176°F).

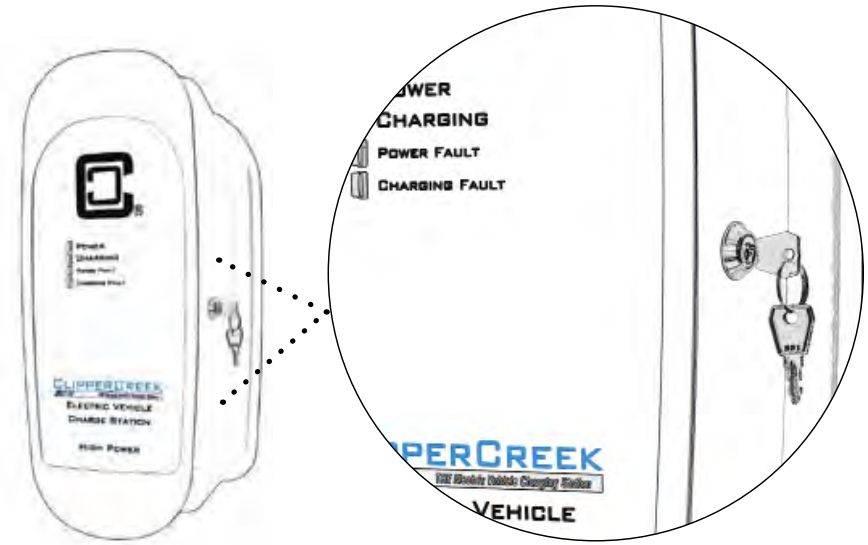
ChargeGuard™ Enabled HCS INSTRUCTIONS

Please refer to these instructions to operate the ChargeGuard™ enabled HCS EVSE:

1. Connect the HCS EVSE to the vehicle with the SAE-J1772™ connector.
2. To enable charging:
   a) Insert the key into the switch located on the right side of the HCS EVSE.
   b) Turn the key 90° clockwise to the vertical position as shown in the **Figure 11**.
   c) The "CHARGING" LED light will illuminate green on the front panel, indicating the vehicle is now being charged.
3. To allow charging of Multiple Vehicles:
   a) Leave the key in the present vertical position. This allows disconnection of the EVSE from one vehicle and reconnection to the same or another vehicle without moving the key.
   b) The EVSE will be enabled and power will be available to vehicles as long as the key remains in the vertical position.

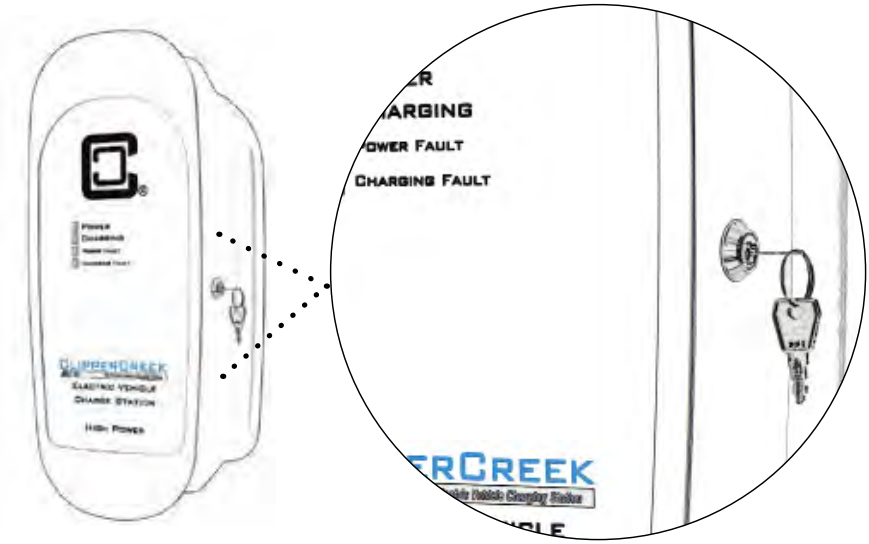
NOTE: The key cannot be removed in the vertical position. See step 4 for key removal instructions.

Figure 11. ChargeGuard™ **(ON or Enabled** position: charging is enabled)



4. To restrict access:
   a) Turn the key counterclockwise 90° as shown in **Figure 12.**
   b) Remove the key.
   c) If a vehicle is connected and charging, that vehicle will continue to charge as long it remains connected to the EVSE.
   d) Once the vehicle is disconnected from the EVSE, the EVSE will require the key to activate another charging session.

Figure 12. ChargeGuard™ **(OFF or Restricted Access** position: The EVSE will be enabled for as long as the vehicle remains plugged in. The EVSE will reset when the vehicle connector is unplugged)



REPLACEMENT KEYS

If you need replacement keys, please contact the ClipperCreek office at (877) 694-4194. Please have the serial number of your EVSE available for reference.

Share2™ (Optional Function)

If the Share2™ option is desired to work in conjunction with the ChargeGuard™ option, these two options must be ordered and built at the same time (Share2™ and ChargeGuard™ are factory-installed options and cannot be installed in the field). The optional Share2™ feature allows two EVSE to share power supplied by one circuit breaker. Please refer to the Share2™ section of this User Manual on page 24 for further instructions.

Share2™ Enabled HCS INSTRUCTIONS

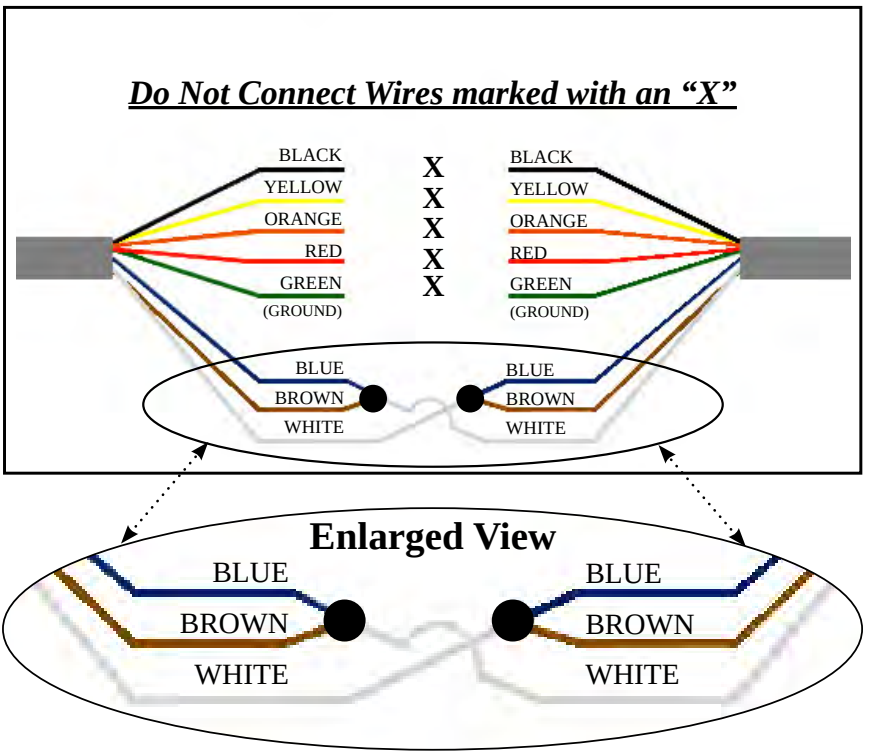
Share2™ allows two EVSE to share power supplied by one circuit breaker. When only one EVSE is charging a vehicle, the full charging capacity is available to that vehicle. When both EVSE are charging vehicles, each EVSE will offer 50% of the circuit capacity to each vehicle (thus "sharing" the circuit breaker). Follow the Share2™ Wiring Instructions in the following section.

Share2™ Wiring Instructions:

Follow the Wiring Diagram below for proper wiring of Share2™. Wiring connections can be made in a junction box or pedestal body (ClipperCreek pedestal bodies double as electrical raceways). **Strip the blue, brown and white wires ONLY.** Use wire nuts (not included) to secure the blue and brown wires to the opposing white wire as indicated by the black dots in **Figure 13**.

WARNING: DO NOT STRIP WIRES THAT ARE UNUSED.

Figure 13. Share2™



Verify Share2™ Function is working properly:

After wiring is complete use a DC volt meter to test functionality. Connect the volt meter negative lead to ground, then connect the volt meter positive lead to the white wire. A measurement greater than 4VDC should be seen when a vehicle is not connected or not charging. A voltage less than 1VDC will be measured on the white wire when a vehicle is charging.

NOTE: There is a 5 second delay once one vehicle stops charging before the white wire returns to greater than 4VDC and an additional 10 seconds before full circuit power will be available to the other vehicle.

Share2™ Operating Instructions:

1. Connect Vehicle #1 to either HCS #1 or HCS #2 with the corresponding SAE-J1772™ connector. Vehicle #1 will have access to the full power available through that circuit.
2. Connect Vehicle #2 to the remaining EVSE with the SAE-J1772™ connector. Each vehicle will now have access to half of the power available through that circuit.
3. If one vehicle disconnects or completes charging, the other vehicle will have access to the full circuit power after 15 seconds.

Figure 14. Share2™ Connect Vehicle #1

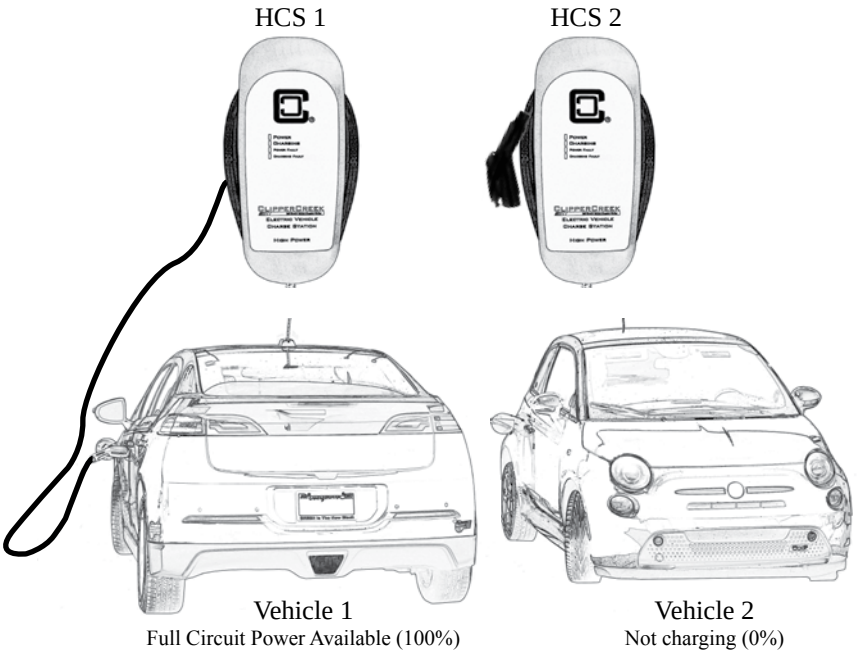


Figure 15. Share2™ Connect Vehicle #2

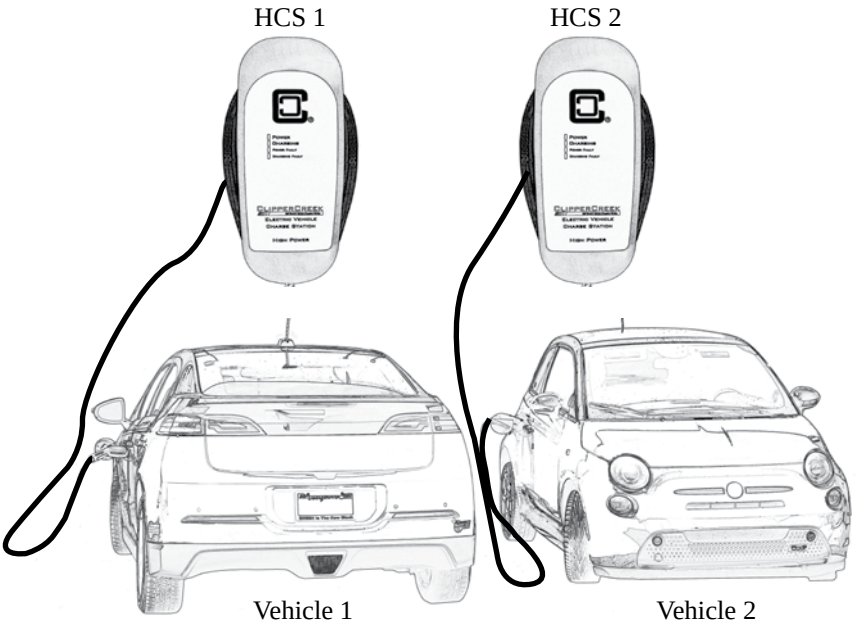
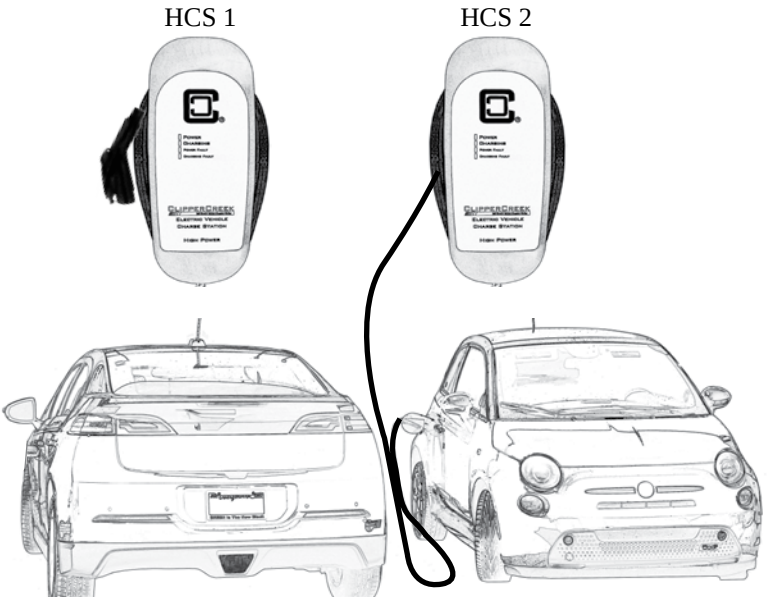


Figure 16. Share2™ One of the vehicles disconnects or completes charging



OPTIONAL: Share2™ operation if Optional ChargeGuard™ is also installed:

If the ChargeGuard™ option is desired to work in conjunction with the Share2™ option, these two options must be ordered and built at the same time (Share2™ and ChargeGuard™ are factory-installed options and cannot be installed in the field). The optional ChargeGuard™ feature allows charging to be enabled or disabled with the use of a key. Please refer to the ChargeGuard™ instructions on page 22 in this User Manual for further instructions.

Figure 17. Share2™ Optional ChargeGuard™

COSMOS™ Load Management Enabled HCS

The COSMOS™ option is a Load Management Access Point which can be connected to a third party load management monitoring and control system to verify energy usage, optimize energy efficiency, and promote energy conservation.

The COSMOS™ Load Management Enabled HCS provides two ways to control energy usage:

1. The Digital Interface
2. The Serial Interface **(if the Serial Interface is used it will take precedence over the Digital Interface)**

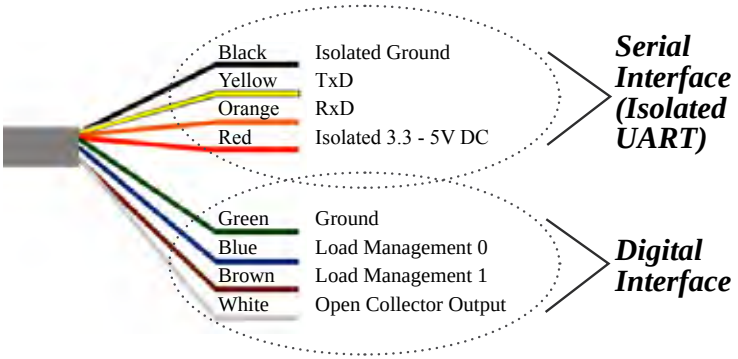
COSMOS™ Wiring Instructions:

1. Determine whether the Digital Interface will be used with or without the Serial Interface in the installation. **NOTE: Contact ClipperCreek to obtain an NDA for documentation describing the Communication Protocol for the Serial Interface.**
2. Confirm power to the EVSE is off and locked out.
3. Connect the appropriate interface wires to the desired controller. Please refer to **Figure 18.**

Figure 18. COSMOS™

Wire Name	Input/Output	Interface	Wire Color	Ratings
Isolated Ground	Input	Serial Interface (Isolated UART)	Black	Ground
TxD	Output		Yellow	3.3 - 5V DC
RxD	Input		Orange	
Isolated 3.3-5V	Input		Red	3.3 - 5V DC, 20mA
Ground	Output	Digital Interface	Green	Ground
Load Management 0	Input		Blue	5V DC
Load Management 1	Input		Brown	5V DC
Open Collector Output	Output		White	max:24V DC, 30mA

WARNING: DO NOT STRIP WIRES THAT ARE UNUSED.

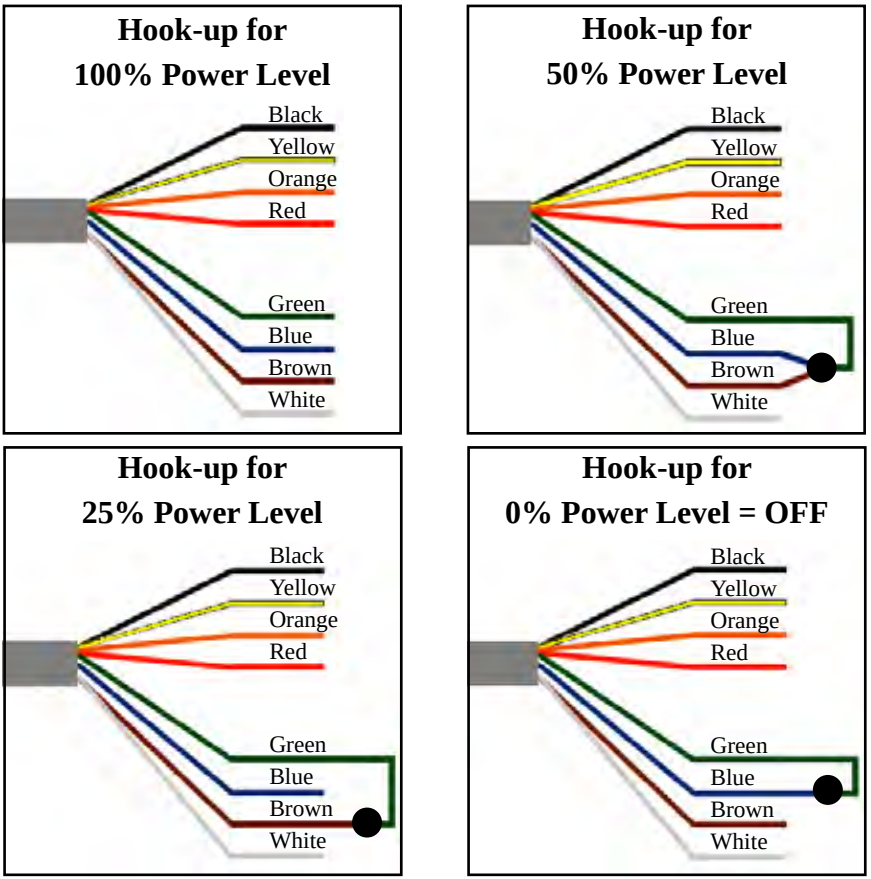


Digital Interface Connection

To utilize the Digital Load Management Interface, **the Digital Interface wiring must be completed regardless of whether or not the Serial Interface is to be utilized in the installation.** The Power Level is determined by the state of the External Load Management Digital Inputs which can either be used independently **OR** will become the default power level if and when the Serial Interface is inactive. Refer to **Figure 19.**

Figure 19. COSMOS™

Input	Load Management 0	Load Management 1	Power Level (% of max continuous current)
Color	Blue	Brown	
State	Not Grounded	Not Grounded	100%*
	Grounded	Grounded	50%
	Not Grounded	Grounded	25%
	Grounded	Not Grounded	0% / Off



* Power Level is returned from a lower power setting to the 100% state after a ten second delay.

COSMOS™ Open Collector Output:

The Optically-coupled Open Collector Output (white wire) will be pulled low when the EVSE power contactor is energized and is returned to a logic high five seconds after the contactor opens. This output is designed to be compatible with the +12V/1kΩ Load Management High/Low or High/Off input terminal of the ClipperCreek CS series products as well as the +5V/10kΩ Load Management 0 or Load Management 1 of another ClipperCreek HCS equipped with the COSMOS™ interface as shown in **Figure 20.**

Figure 20. COSMOS™

Output	Open Collector Output	Vehicle State
Color	White	
State	Grounded (Logic Low)	Charging
	Not Grounded (Logic High)	Not Charging*

* The Open Collector Output signal returns to the Not Grounded (Logic High) state five seconds after the vehicle stops charging.

COSMOS™ Digital Interface Compatibility

Please contact ClipperCreek for additional information. Refer to **Figure 21.**

Figure 21. COSMOS™

Compatible w/COSMOS™ Digital Interface			Notes
Product	Yes	No	
COSMOS™ Serial Interface	X		**The power-on default condition is determined by the Digital Interface.** If Serial Communication is lost for a period of 10 seconds or greater, the EVSE operation will revert to the Digital Input Condition. **An active Serial Interface takes precedence over the Digital Interface.**
ChargeGuard™	X		The COSMOS™ Digital Interface can be used in conjunction with the Charge Guard™ option. However, if the Serial Interface connections are being utilized, then any such functionality is strictly under the control of the Serial Communication Controller as built into the end user application.
Share2™		X	Share2™ utilizes the COSMOS™ Digital inputs for a self-managed circuit sharing scheme and cannot be used with another external load controller that utilizes the COSMOS™ Digital Inputs.
PMD-10 Pedestal	X		Must be used with the optional ¼" NPT Adaptor Assembly
Standard Pedestal	X		Must be used with the optional ¼" NPT Adaptor Assembly

MAINTENANCE

The HCS requires no periodic maintenance other than occasional cleaning.

WARNING: To reduce the risk of electrical shock or equipment damage, exercise caution while cleaning the unit and the EV charge connector cable.

1. Turn off the charge station at the circuit breaker before cleaning.
2. Clean the charge station using a soft cloth lightly moistened with mild detergent solution. Never use any type of abrasive pad, scouring powder, or flammable solvents such as alcohol or benzene.

AVERTISSEMENT: Pour réduire le risque de choc électrique ou des dommages équipement, user de prudence lors du nettoyage de l'appareil et le câble du connecteur de charge EV.

1. Eteignez la équipement au disjoncteur avant de le nettoyer.
2. Nettoyez l'équipement à l'aide d'un chiffon doux légèrement humidifié avec une solution de détergent doux. Ne jamais utiliser de tampons abrasifs, de poudre à récurer ou de solvants inflammables tels que l'alcool ou le benzène.

CUSTOMER SUPPORT

Call your ClipperCreek, Inc. Service Representative at any time, 24 hours a day, at the number below. **PLEASE HAVE THE MODEL NUMBER AND SERIAL NUMBER AVAILABLE WHEN YOU CALL.** This information is printed on the label on the side of the HCS enclosure. If your call is made after business hours or on weekends, please leave your name, telephone number, the unit serial number, and a brief description of the problem. A Service Representative will call back at the earliest opportunity.

Distributor Service Number Here

TO CONTACT CLIPPERCREEK, INC. DIRECTLY FOR SERVICE, CALL 877-694-4194 MONDAY TO FRIDAY BETWEEN 8:00 AM AND 5:00 PM PACIFIC STANDARD TIME.

SPECIFICATIONS

Line Input Power Voltage & Wiring

240V AC single-phase - L1, L2, and Safety Ground.
208V AC 3-phase wye-connected - Any two phases and Safety Ground.
240V AC 3-phase, delta-connected. With center-tap on one leg, must use only the two phases on either side of the center-tap. The two phases must both measure 120V AC to ground. **Do not use the third leg (208V "Stinger").**

Supplied Input Conductors

Pre-installed supplied input conductors of the HCS-15, 20, 25, 30 or 40: L1, L2 and Ground use 3 feet of 10AWG, 90ºC copper wire.
Pre-installed supplied input conductors of the HCS-50 and HCS-60: L1, L2 and Ground use 3 feet of 8AWG, 90ºC copper wire.

Voltage Range

185V AC to 264V AC

Frequency

60 Hz

CCID

20mA

Current & Output Power (at 240VAC)

HCS Model Number	Circuit Breaker	Max Current	Output Power	Cable Length
HCS-15 (hardwired)	15A	12A	2.9 kW	25 ft (7.6m)
HCS-20 (hardwired)	20A	16A	3.8 kW	25 ft (7.6m)
HCS-25 (hardwired)	25A	20A	4.8 kW	25 ft (7.6m)
HCS-30 (hardwired)	30A	24A	5.8 kW	25 ft (7.6m)
HCS-40 (hardwired)	40A	32A	7.7 kW	25 ft (7.6m)
HCS-40P + 6-50P	40A/50A	32A	7.7 kW	25 ft (7.6m)
HCS-40P + 14-50P	40A/50A	32A	7.7 kW	25 ft (7.6m)
HCS-50 (hardwired)	50A	40A	9.6 kW	25 ft (7.6m)
HCS-50P + 6-50P	50A	40A	9.6 kW	25 ft (7.6m)
HCS-50P+14-50P	50A	40A	9.6 kW	25 ft (7.6m)
HCS-60 (hardwired)	60A	48A	11.5 kW	25 ft (7.6m)

Note that the maximum current for the vehicle is set by the duty cycle of the Pilot waveform.

Output power is variable depending upon the HCS model and vehicle demand.

Plugs

An attached NEMA 6-50P or NEMA 14-50P plug is available on the HCS-40P and HCS-50P

Dimensions

Dimensions are for the enclosure only:
Height: 500 mm (19.7 inches)
Width: 225 mm (8.9 inches)
Depth: 135 mm (5.3 inches)

Weight

HCS-15, 20,25,30,40 or HCS-40P with 32A *SAE-J1772™* connector and 25' length of cable: 6.0kg (14 lbs)
HCS-50 or HCS-50P with 40A *SAE-J1772™* connector and 25' length of cable: 8.5kg (14 lbs)
HCS-60 with 80A *SAE-J1772™* connector and 25' length of cable: 9.0 kg (21 lbs)

Environment

Operating Temperature: -30°C to +50°C (-22°F to +122°F)
Storate Temperature: -40°C to +80°C (-40°F to +176°F)
Enclosure Rating: NEMA 4 - watertight

Agency Approvals

ETL Listed, FCC Part 15 Class B

L2X Specification, Install Manuals

- DUAL PORT 30A/40A LEVEL 2
- CHARGING PROTOCOL: SAE J-1772
- 7.2 KW / 9.6 KW PER PORT
- 18 FT w/ CABLE RETRACTOR
  - OPT: 25 FT
- 7" COLOR SCREEN-STANDARD
- NEMA 3R HOUSING
- OCPP COMPLIANT-STANDARD
- RFID READER-OPTIONAL
- GPRS MODEM-OPTIONAL

DUAL PORT 30A/40A AMP LEVEL 2 COMMERCIAL CHARGING STATION

	Dual Port 30A	Dual Port 40A
Model #	EVP-2002-30	EVP-2002-40
Power per Port	7.2 kW (240V AC @ 30A)	9.6 kW (240V AC @ 40A)
Electrical Service		
Power	240/208 VAC, 30A Load with 40A Branch Circuit Per Port	240/208 VAC, 40A Load with 50A Branch Circuit Per Port
Service Panel	40A Dual Breakers Per Port (Non-GFCI Breakers)	50A Dual Breakers Per Port (Non-GFCI Breakers)
Service Wiring	3-wire (L1, L2, Earth Ground)	
Functional Interfaces		
Connector Type	SAE J1772	
Charging Protocol	SAE J1772	
Standard Cable Length	18 ft	
Cable Retractor (opt)	Overhead retractor ADA compliant	
LCD Display	1500 nits 7" color, 800 x 480, UV protected	
Card Reader (opt)	ISO 14443 Type A&B, ISO 18092 NFC	
Vehicle to Grid (opt)	ISO 15118 (available Oct 2017)	
Safety and Connectivity		
Ground Fault Detection	5mA CCID trip with 3 x automatic restarts	
Detect Coupler Removal	SAE J1772™	
Power Measurement	Accuracy: ± 2% from 5% to full scale (30A/40A)	
Power Report Interval	Every 15 minute on the hour	
LAN (opt)	2.4 GHz Wi-Fi (802.11 b/g/n)	
Wide Area Network	3G GSM, 3G CDMA	
Communication Protocols	BTCPower EVPump and OCPP	
Safety and Operation		
Enclosure Rating	NEMA 3R	
Regulatory Compliance	ETL certified for USA and cUL for Canada; complies with UL 2594, UL 2231-1, UL 2231-2, and NEC Article 625, EMC: FCC Part 15 Class A	
Operating Temperature	-30°C to +50°C (-22°F to 122°F)	
Storage Temperature	-30°C to +50°C (-22°F to 122°F)	
Humidity	85% non condensing	

5. MAINTENANCE

DANGER
READ AND FOLLOW THE "SAFETY CONCERNS" AT THE BEGINNING OF THIS MANUAL BEFORE USING THIS DEVICE

5.1 Maintenance Precautions

Each of the capacitors in this device have a high voltage for a time after shutting off the input power supply. Allow 5 minutes after powering down before servicing internal components.

5.2 Maintenance Items

Perform periodic checks.

5.3 Visual Check Items

1. Check for abnormal sound from running fans and power units. If there is abnormal sound, please contact a BTC Power representative for further assistance.
2. Check for abnormal odor, changes of inner materials, corrosion, anomaly in appearance, etc., in this device. If there are any anomalies, please contact a BTC Power representative for further assistance.
3. Check for dust and dirt in this device regularly and, if any is found, clean using appropriate procedures.

5.4 Replacement of Fixed-Life Components

To prevent the device from failure due to worn out components, it is necessary to replace the components before they reach the end of their lifespan. Use the following replacement intervals as a guideline for the estimate of the total running time. Please contact a BTC Power representative for further assistance when you replace the parts.

- Power feed cable: Approximately three (3) years.
- Intake and exhaust filters: Approximately three (3) years.
- Please keep in mind that the replacement interval of each part can vary depending on, for example, the usage environment of the device.

6. WARRANTY INFORMATION

BROADBAND TELECOM POWER, INC.
LIMITED PRODUCT WARRANTY

This Limited Product Warranty applies to customers who have purchased a BTCPower Electric Vehicle Charging Station(s) and/or a related product ("Product(s)") from Broadband Telecom Power, Inc., or one of its authorized distributors.

LIMITED WARRANTY: Subject to the exclusions from warranty coverage set forth below, BTCPower warrants that the Product will be free from any defects in materials and/or workmanship (the "Limited Warranty") for a period of one (1) year after the date of the initial installation of the Product (the "Warranty Period"). If the Product becomes defective in breach of the Limited Warranty, BTCPower will, upon written notice of the defect received during the Warranty Period, either repair or replace, at BTCPower's election, the Product if it proves to be defective; provided, that BTCPower will only be responsible for the cost of any parts associated with the repair or replacement of any defective Product for a period of one (1) year after the date of the initial installation of the Product.

You acknowledge that replacement products provided by BTCPower under the Limited Warranty may be remanufactured or reconditioned Products or, if the exact Product is no longer manufactured by BTCPower, a Product with substantially similar functionality ("Replacement Products") will be supplied. Any Replacement Products so furnished will be warranted for the remainder of the original Warranty Period or ninety (90) days from the date of delivery of such Replacement Product, whichever is greater. Should BTCPower be unable to repair the Product, BTCPower will replace the Product with the latest model/version of a similar product in current production.

EXCLUSIONS FROM LIMITED WARRANTY

IMPORTANT: The Limited Warranty and on your Product shall not apply to defects, or service repairs, resulting from any of the following:

▪Force Majeure – any occurrence or extraordinary event or circumstance beyond the control of BTCPower that is an act of God or whether that occurrence is caused by war, riot, storm, (such as hurricane, flooding, earthquake, volcanic eruption, etc.), or other natural forces, or acts of nature or other causes.

EXCLUSIONS FROM LIMITED WARRANTY (con'd)

- Vandalism.
- Any Alteration or Modification of the Product in any way not approved in writing by BTCPower.
- Abuse, damage or otherwise being subjected to problems caused by negligence (including but not limited to physical damage from being struck by a vehicle) or misapplication, or misuse of the Products by customers or end users.
- Installation or relocation of the Products unless performed by an authorized BTCPower distributor or by an authorized installer or service provider.
- Improper site preparation or maintenance.
- Damage as a result of accidents, extreme power surge, extreme electromagnetic field.
- Use of the Product with software, interfacing, parts or supplies not supplied by BTCPower.

You are responsible for the proper installation and maintenance of the Product. Any service or repairs beyond the scope of the Limited Warranty above are subject to BTCPower's prevailing current labor rates and other applicable charges.

Third Party Products. This Limited Warranty is exclusive of products manufactured by third parties ("Third Party Products"). If such third party manufacturer provides a separate warranty with respect to the Third Party Product, BTCPower will include such warranty in the packaging of the BTCPower Product.

OBTAINING WARRANTY SERVICE

To obtain warranty service you must contact BTCPower within 3 business days of realization of the defect at 1-714-259-7996 and ask for Customer Service, provide a written description of the source of the defect along with any pictures and email this information to the email address provided by the customer service agent. If necessary, you may be required to deliver the Product, in accordance with the instructions provided by BTCPower, along with Product's serial number, to BTCPower's repair facility.

2 INSTALLATION

2.1 Before Installing

Before any installation work is performed, study all drawings furnished by the supplier for the particular installation. These include arrangement drawings (front, end, and plan views), connections to the equipment that may be required to meet any local codes (such as mats, screens, or railings) is not furnished.

2.2 Safety Requirements

The EVSE (Electric vehicle supply equipment) should be installed by a qualified electrician in accordance with local codes and all applicable ordinances

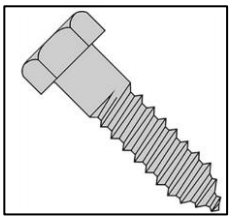
The charging station is required to be connected to a ground, metal, permanent wiring system. Connections to the charge station should comply with all local codes and ordinances.

Read all installations instructions carefully prior to performing the installation.

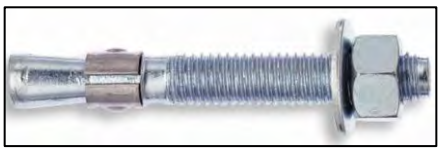
Safety Equipment included with EVSE

BTCP EVSE's are equipped with a ground fault current interrupting device for user protection. The GFCI is automatically software tested so no user interaction is required to verify proper operation. In the event of a failure, the system will indicate a fault via a red LED or a message on the User Interface screen.

2.3 Tools and Ancillary Equipment

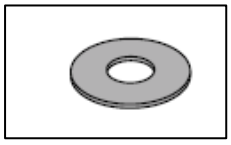


¼" Lag Bolt
QTY 6
(EVP-2001-00)

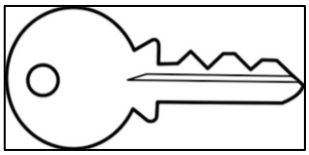


Concrete Expansion Bolts
QTY 4

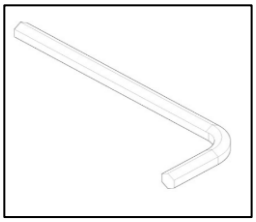
¼" Torque Wrench



1/4" Washer
QTY 6

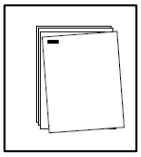


Back Door Key



3/16" Allen Wrench
(EVP-2001-00)

Phillips Screw Driver



Instruction Manual

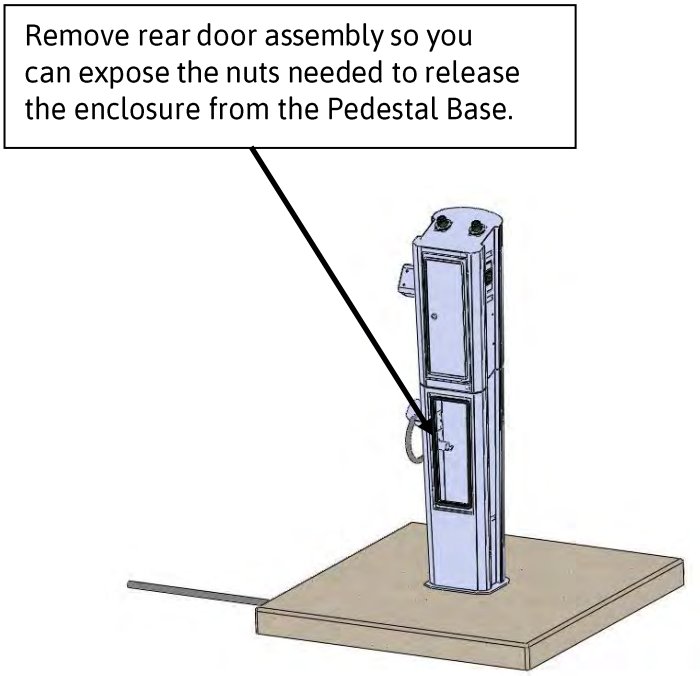
2.4 Special Tools & Hardware Torque Value

Tools/Hardware	Torque Specification	Configuration
6-32 UNC	13 in-lb	+/- 2 in-lb
10-32 UNF	30 in-lb	+/- 5 in-lb
1/4-20 UNC	53 in-lb	+/- 7 in-lb
1/2-13 UNC	48 in-lb	+/- 7 in-lb
M6 x 1 LIGUIDTIGHT FITTING	30 in-lb	+/- 5 in-lb
FUSE BLOCK LUGS, 8 AWG	40 in-lb	+/- 5 in-lb
FUSE BLOCK LUGS, 6 AWG	45 in-lb	+/- 5 in-lb
GROUND TERM. SCREWS, 14-10 AWG	34 in-lb	+/- 5 in-lb
GROUND TERM. SCREWS, 8 AWG	38 in-lb	+/- 5 in-lb
¼-20" LOCKNUT	12 ft-lbs	EVP-2001-XX-P EVP-2002-XX-P

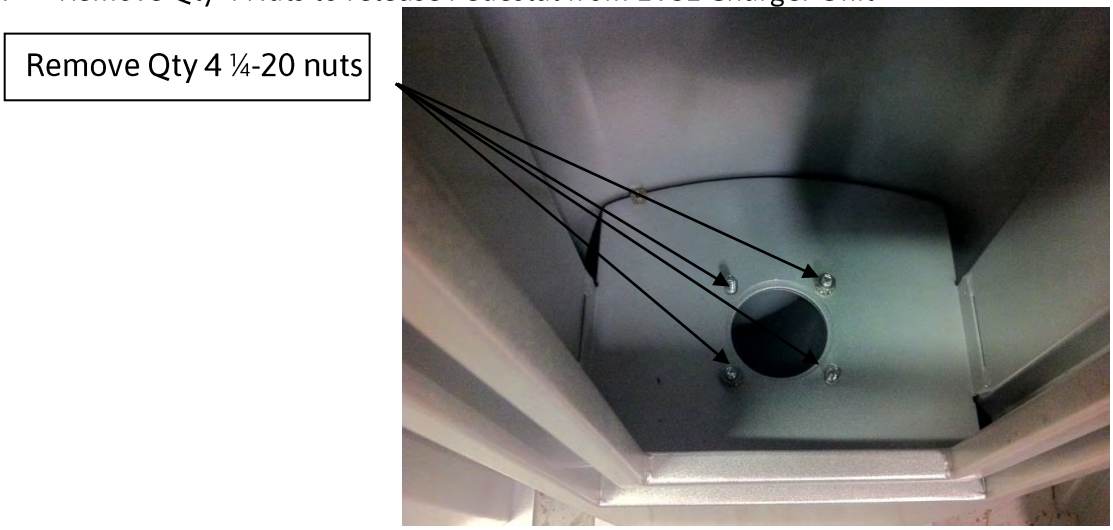
2.5 Installation Procedure for Pedestal Chargers

To mount dual and single Pedestal Chargers follow these steps:

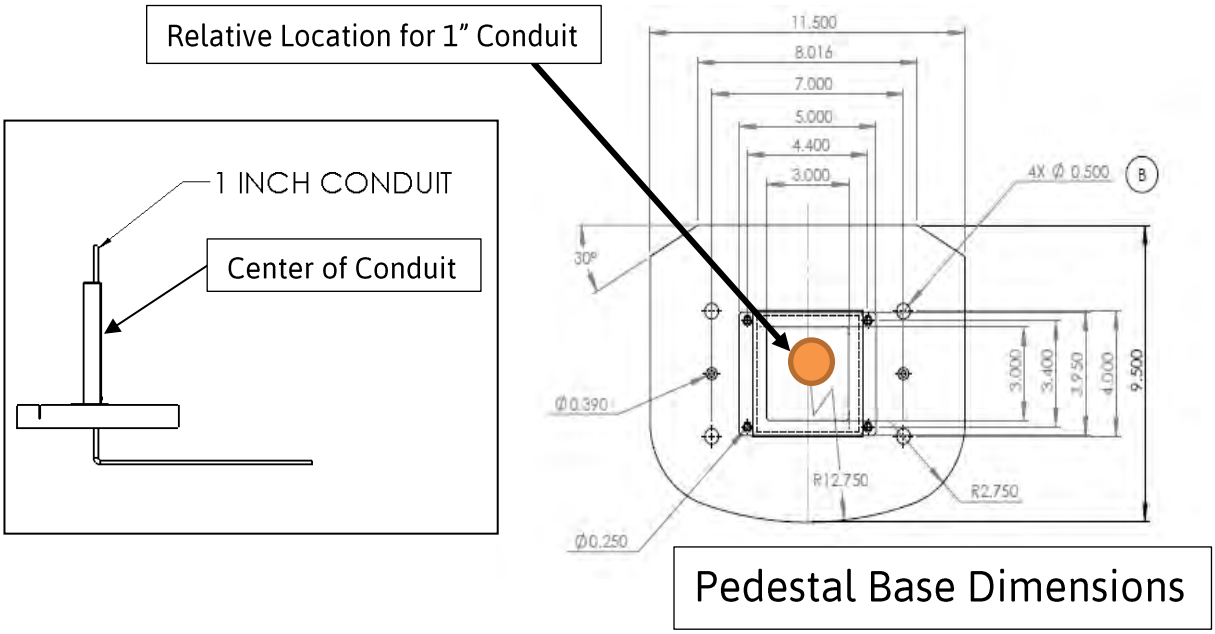
1. Remove Pedestal Charger from Packaging
2. Open rear door assembly to expose nuts



3. Remove Qty 4 Nuts to release Pedestal from EVSE Charger Unit

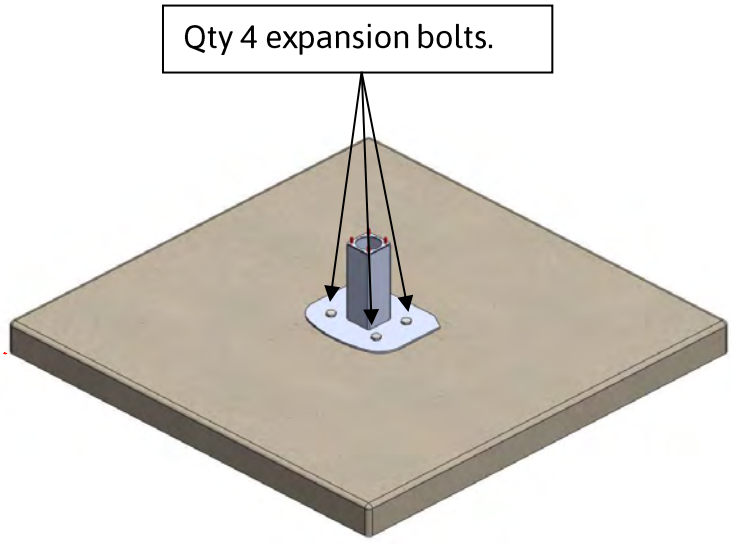


Note: Before bolting Pedestal Base to Concrete Slab, ensure that AC Powerlines are properly placed inside of conduit in the center of the pedestal base mounting location

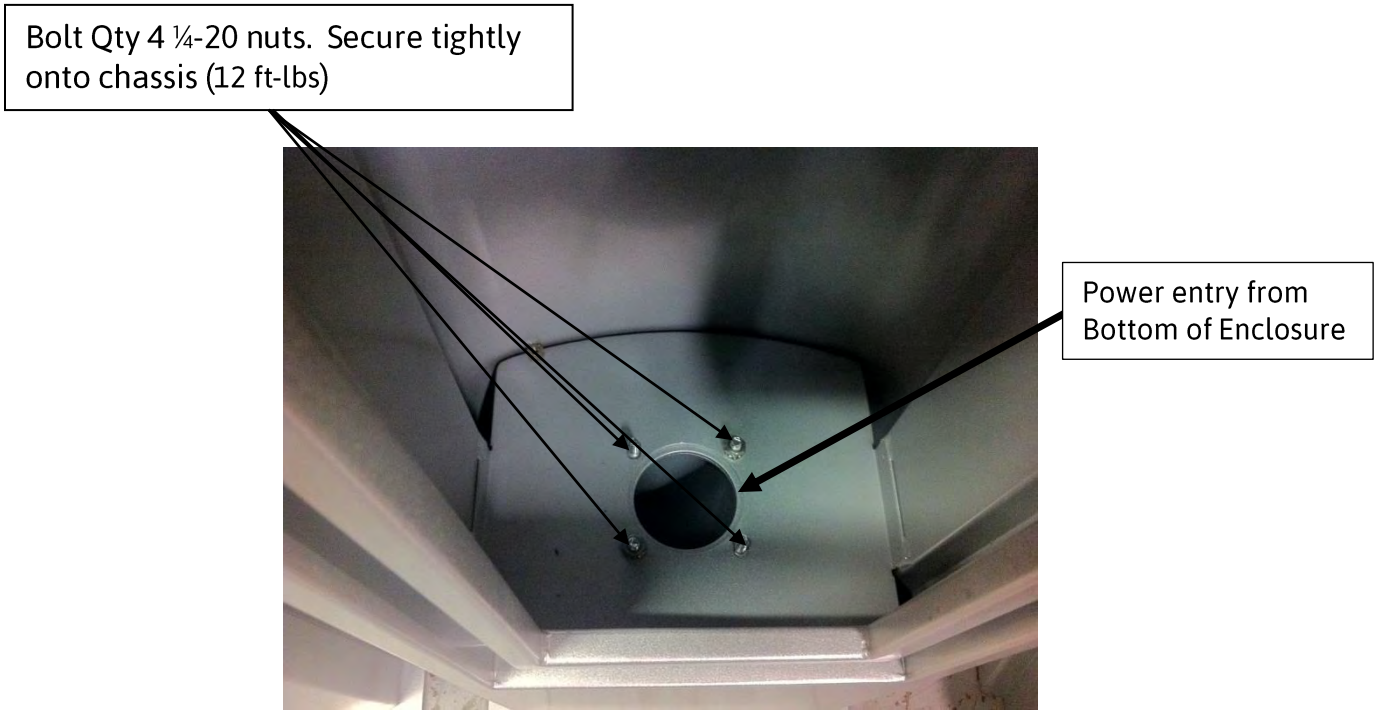


Pedestal Base Dimensions

4. After freeing Pedestal Base from EVSE Charger Unit, use concrete expansion bolts to bolt pedestal base to concrete slab.



5. After bolting pedestal base to concrete, attached EVSE Charger by using the nut that was previously removed in step 3 to attached EVSE Charger to Pedestal Base.
6. Fasten Locknuts to 12ft-lbs as shown in figure below



Note: Before bolting Pedestal Base to Concrete Slab, ensure that AC Powerlines are properly placed inside of conduit in the center of the pedestal base mounting location.

2.6 Installation Procedure for Wall Mounted EVSE Chargers

To mount the dual and single wall mount chargers, follow these steps:

1. Remove EVSE Wall Charger from packaging.
2. Locate key in Same packaging to open charger exposing four mounting holes shown in the figure below.

Open Door with Key to Expose Mounting

3. Mount the secure rear EV hold bracket as shown in fig 8.

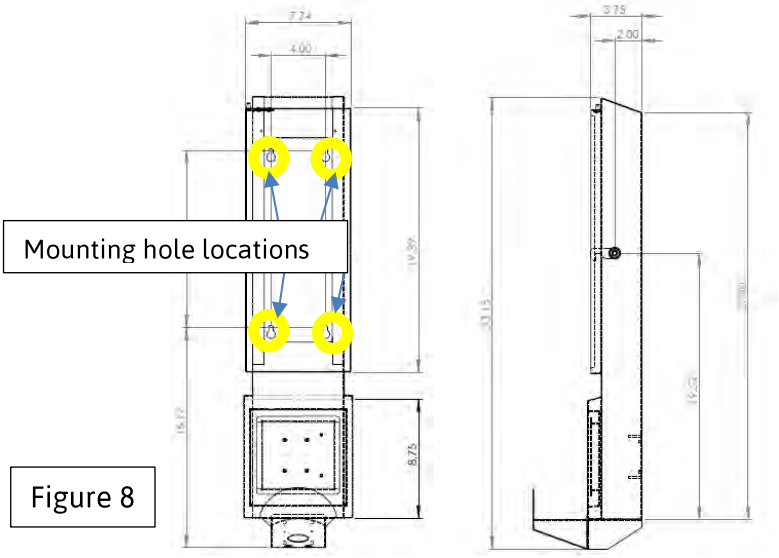
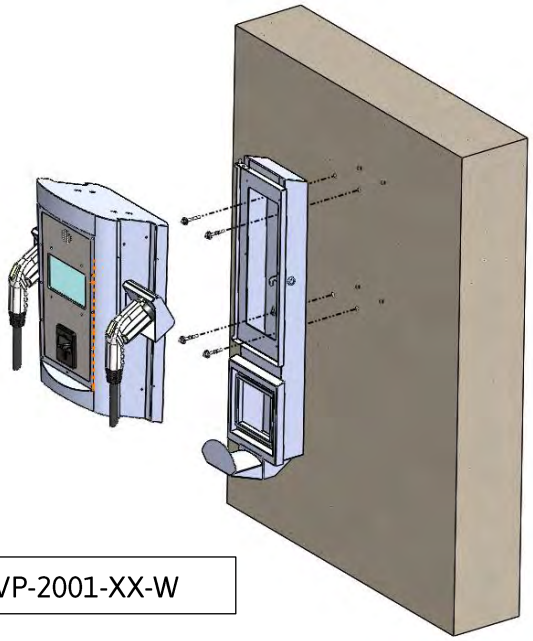
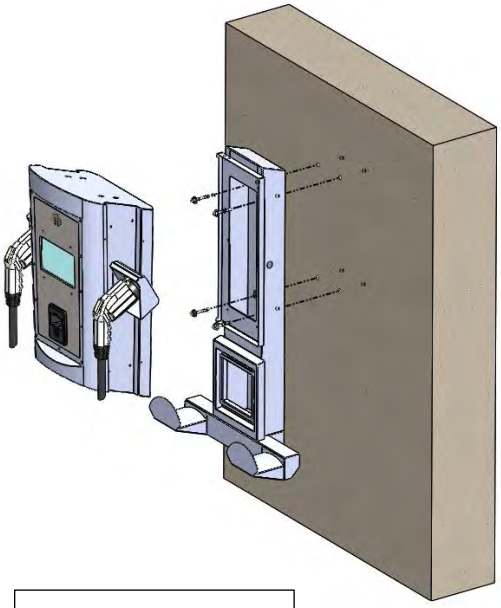


Figure 8

4. Use expansion bolts to anchor the EVSE Wall Mount Charger to the wall as shown below for the Dual and Single EVSE Wall Mount Chargers.



EVP-2001-XX-W



EVP-2002-XX-W

3 ELECTRICAL CONNECTIONS

The EVP-2001-XX-WM & EVP-2002-XX-WM (wall mount) is provisioned to receive an electrical power connection from the bottom of the pedestal as shown in Fig. 11

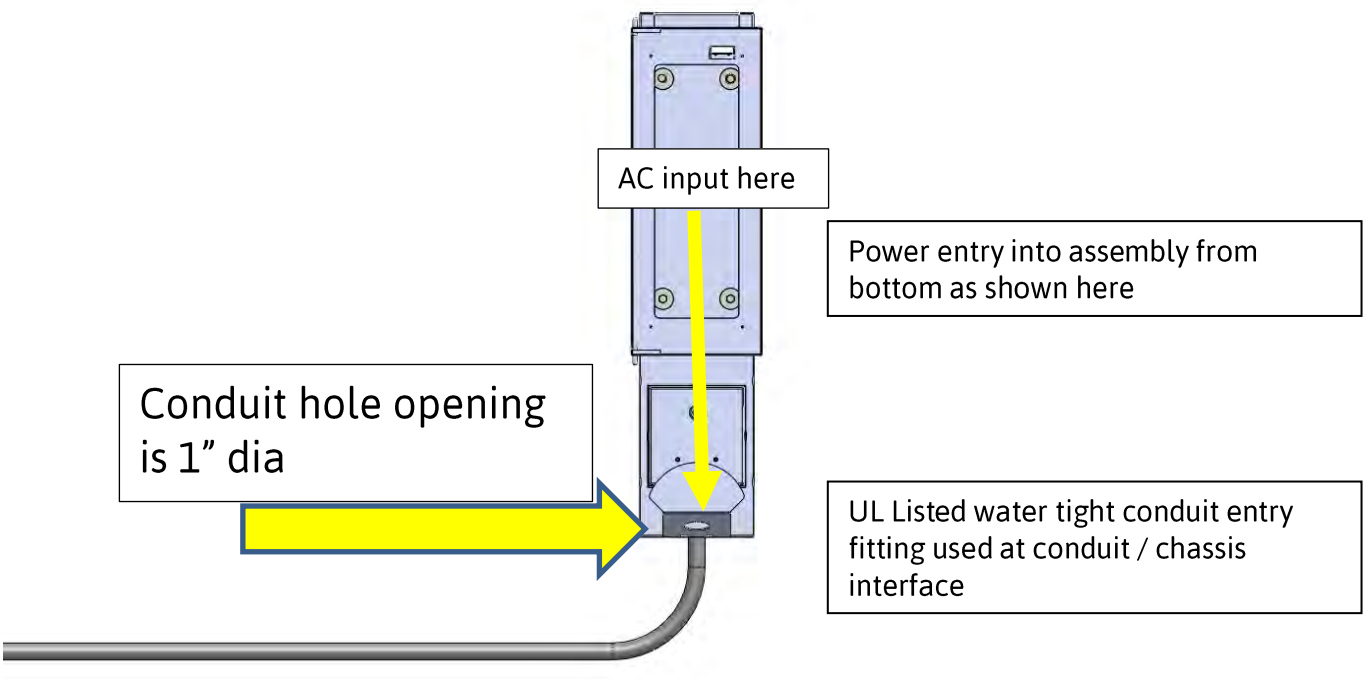


Fig. 10
Electrical conduit bottom entry onto enclosure

WARNING:
Failure to provide adequate structural strength for this component can result in serious personal injury or damage to equipment! It is the installer's responsibility to make sure the structure to which this component is attached can support five times the combined weight of all equipment.

3.1 EVP-30 Single and dual charge system electrical connection

System electrical power needs to be provisioned with the following:

Single sided charger connections

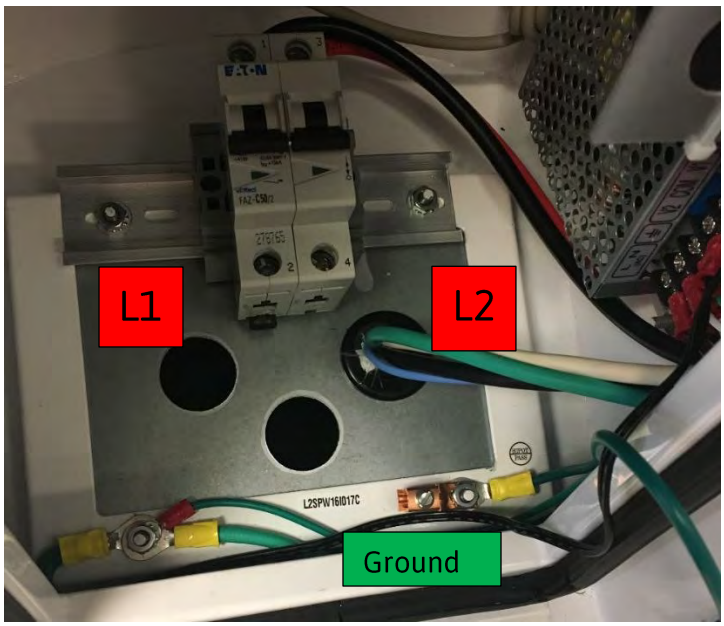
- 2 appropriately gauged hot leads (typically 10 AWG for 30A installs and 8 AWG for 40A installs)
- 1 appropriately gauge ground (green) lead
- Install electrical conduit per all applicable state and federal regulations
- EVSE power should be inserted thru bottom of EVSE enclosure
- Electrical connections shall be made as shown
- Note, for the dual units, two separate line pairs need to be connected from independent service panel breakers of the appropriate rating.

Note: Each hot lead should measure 120VAC to ground.

Service Connections

3.2 Single Port EVSE Charger

Connect L1 and L2 to the input safety breaker. BTC Power highly recommends crimp ferrule lugs to be used to make all electrical connection to the input safety breaker. This requires the correct crimping tool. In addition, a torque wrench should be used on the input breaker screw terminals. Set the wrench to a torque of 2.4NM or 21.2 in/lbs. A pull test should be done on the wire connections to ensure proper connection.



3.3 Dual Port EVSE Charger

Connect L1 L2 on both phases to the input safety breaker. BTC Power highly recommends crimp ferrule lugs to be used to make all electrical connection to the input safety breaker. This requires the correct crimping tool. In addition, a torque wrench should be used on the input breaker screw terminals. Set the wrench to a torque of 2.4NM or 21.2 in/lbs. A pull test should be done on the wire connections to ensure proper connection.

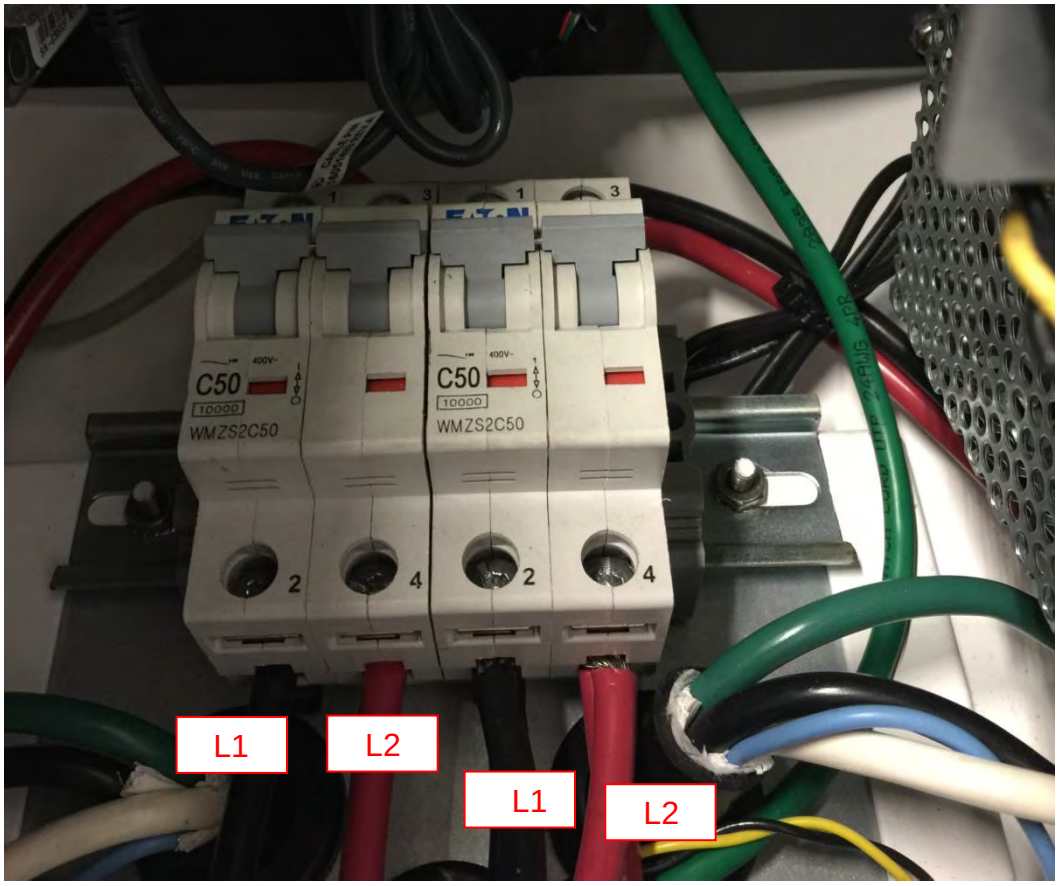
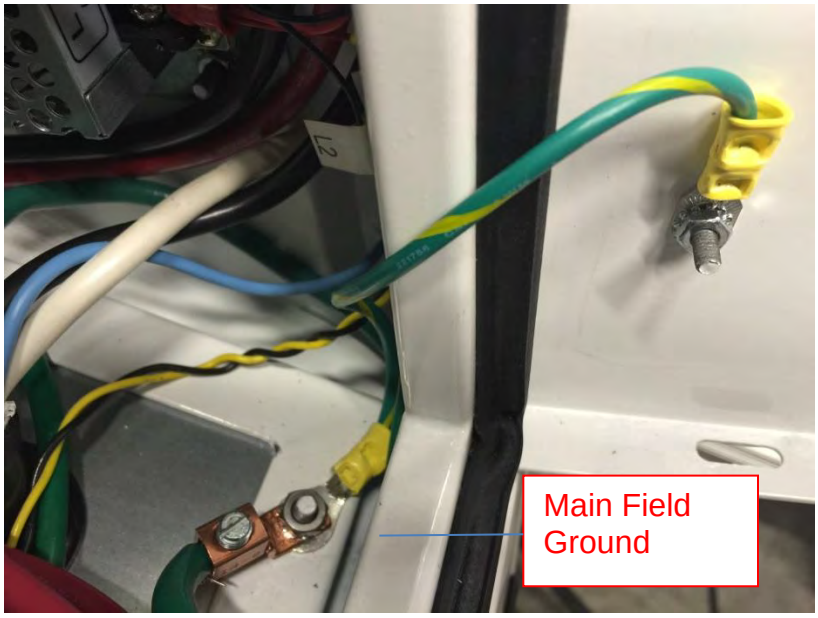
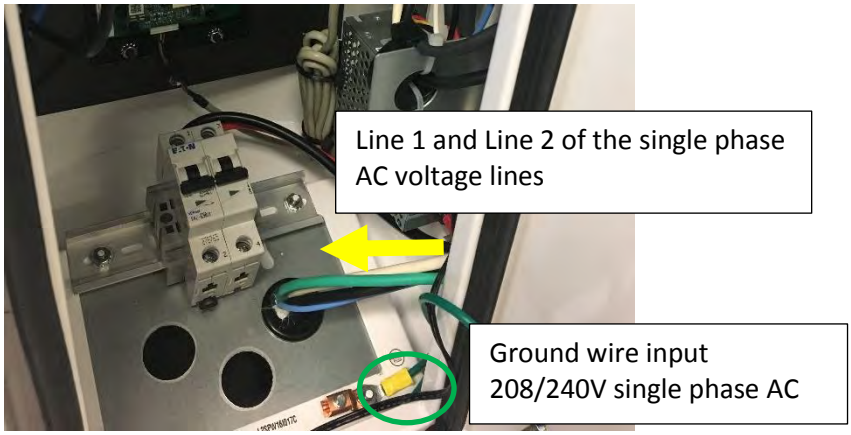


Fig. 7a
L1, L2 for left hand side charger
L1, L2 for right hand side charger

NOTE: SEPARATE LINES PER PORT ARE REQUIRED



Check for ground cable on the door.



CS-X0-N Specification, Install Manuals

The CS-100 is a 100amp Level 2 charger designed for higher power use cases such as charging Motiv electric delivery trucks. It is available with a J1772 or a 3-Phase connector (3-phase connector used on some Motiv vehicles). This charger has an OCPP v1.6 interface for network portability. The CS-100-N-C-P is shown in the following photo.

Technical Specifications

AC Power Input	208/240 VAC, Single Phase (3 phase possible)
Amperage	100A per port
Required Service Panel Breaker	100A, double pole, non-GFCI type on dedicated circuit per port
Output Charging Power	19.2kW per port
Charging Connector	SAE J1772, 25' cable
Ground Fault Detection	Build-in, 5mA trip
Surge Protection	6kV @ 3000A - IEC 61000-4-4
Operating Temperature	-30°C to +50°C
Operating Humidity	90% RH, non-condensing
Enclosure	NEMA 4 – outdoor use; water tight
User Interface	Status Indicator LEDs, Smartphone App
Payment System	OpConnect App
Warranty	3 years parts only (maintenance plan includes warranty labor)
Network	Cellular data for required reporting
Cord Management System	Optional - Pulley-weight-gravity based system for ADA compliance

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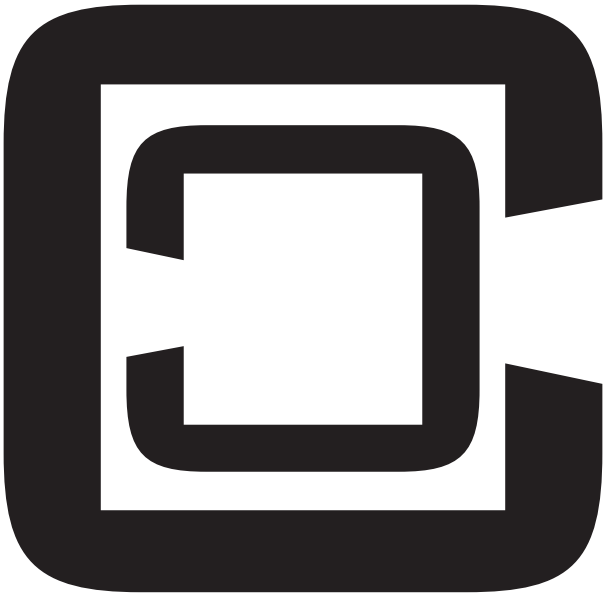

Installation Manual

Model CS 3-Phase

PLEASE NOTE

This user's manual includes the latest information at the time of printing. ClipperCreek, Inc. reserves the right to make changes to this product without further notice. Changes or modifications to this product by other than an authorized service facility may void the product warranty.

Contact a Customer Service Representative with any questions about the use of this product.

To download or view the latest version of this manual please visit https://www.clippercreek.com/3-phase

CS 3-Phase Installation Manual 20170418.indd
CS 3-Phase Installation Manual 2017418.pdf

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IMPORTANT SAFETY INSTRUCTIONS

Carefully read these instructions and the charging instructions in the vehicle owner's handbook before charging the electric vehicle.

The following symbols may be found in this manual or on labels affixed to the EVSE:

NOTE *This means pay particular attention.* Notes contain helpful suggestions.

CAUTION: *This symbol means be careful.* There is potential of doing something that might result in damage to the equipment.

WARNING: *This symbol means danger.* This is a situation that could cause bodily injury. Before working on any electrical equipment, be aware of the hazards involved with electrical circuitry and standard practices for preventing accidents.

Safety Guidelines

- Use this EVSE to charge electric vehicles equipped with a conductive charge port only. See the vehicle's owner's handbook to determine if the vehicle is equipped with a conductive charge port.
- Make certain the EVSEs supply cable is positioned so it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
- There are no user serviceable parts inside. Refer to the Customer Support section in this manual for service information. Do not attempt to repair or service the EVSE yourself.
- Do not operate the EVSE with a visibly damaged supply cable or EVSE. Refer to the Customer Support section in this manual for information on contacting a Service Representative.

WARNING: Turn off input power to the EVSE at the circuit breaker panel before servicing or cleaning the unit.

FCC INFORMATION

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This product has been designed to protect against Radio Frequency Interference (RFI). However, there are some instances where high powered radio signals or nearby RF-producing equipment (such as digital phones, RF communications equipment, etc.) could affect operation.

If interference with the EVSE is suspected, we suggest the following steps be taken before consulting a ClipperCreek Sales and Service Representative for assistance:

1. Reorient or relocate nearby electrical appliances or equipment during charging.
2. Turn off nearby electrical appliances or equipment during charging.

CAUTION: Changes or modifications to this product by other than an authorized service facility may void FCC compliance.

OPERATION

The CS 3-Phase EVSE is a conductive EVSE that provides the Electric Vehicle (EV) user with a safe and manageable link between the power grid and the electric vehicle.

Figure 1. The CS 3-Phase Front Panel

Remove the charging connector from its holder and plug it into the vehicle's charge port. If there is a mechanical latch that holds the connector firmly while charging, be sure the latch has "clicked" into place. Normally, the vehicle will immediately request a charge, the green CHARGING light will turn on, and charging will begin. Charging overnight is the most convenient way to ensure the vehicle's full range will be available for the next day.

If the vehicle has stopped charging, the green "Charging" light will turn off. Remove the cable and the vehicle is ready to use. If the charging is still in progress, first push the button on the CS 3-Phase front panel. The charging light will start blinking. Now remove the connector.

Front Panel

The front panel has one GREEN and one RED light to indicate the status of the CS 3-Phase. Please refer to **Table 1** to check the status of the EVSE.

Table 1. Front Panel Indicators

(Green) CHARGING	(Red) PROTECTION	Status of CS 3-Phase
OFF	OFF	Vehicle not connected, or vehicle not requesting charge.
ON	OFF	Vehicle is charging.
OFF	ON	The ground fault is tripped, the ground is missing, or service is required.
ON	ON	There is a problem on the vehicle.
blink	OFF	Charging was interrupted by the User - or - disabled by external Timer - or - unit is in Cold Load Pickup.

In Case of Difficulty

ClipperCreek recognizes that this EVSE will be heavily relied upon to charge the electric vehicle for daily transportation needs. Therefore, every effort will be made to restore service should problems arise.

In the event of a problem, charging will stop and the Red PROTECTION light will turn on. If this happens, please try the two simple steps below before calling a Service Representative.

1. Remove the connector from the vehicle socket. The Red PROTECTION light may turn off. If it does turn off, plug the connector back into the vehicle socket, and verify that charging begins normally.
2. If the Red PROTECTION light does not turn off when the connector is removed, be sure the connector is removed from the vehicle socket and switch off power at the circuit breaker to the CS 3-Phase. Wait a few seconds and switch the circuit breaker back on. Reconnect the cable to the vehicle. Charging should begin normally.

If charging does not begin, or if the Red PROTECTION light turns on, call a Service Representative at 1-877-694-4194. The information gained by the above steps will help the Service Representative diagnose the problem and get the CS 3-Phase operational again as quickly as possible.

FEATURES

The following features are supported by the CS 3-Phase:

Personal Protection System: Ground Fault protection with Self-Testing and Auto-Reclosure, no manual resetting or testing is necessary.

Ground Monitoring Circuit: Continuously checks for the presence of a Safety Ground connection.

Auto-Reclosure: If a problem occurs that interrupts charging, the unit will automatically clear all error indications after 5 minutes, and attempt to begin charging again. This feature helps ensure that the vehicle will be charged and ready for use when needed. If the problem is immediately sensed a second time, the unit will wait another 5 minutes and try again. This process will repeat several times, at which point power will be removed and no further attempt will be made. The Red PROTECTION light on the front panel will turn on. Temporary problem indications such as ground-faults or utility power surges can be overcome automatically without the need for the user to manually re-initiate charging.

Off-Peak Charging: For this feature, an external timer needs to be installed (purchased separately). The local utility may install a special Time of Use meter. Many utilities plan to give very low rates to those EV owners who charge in the late evening. If a timer is installed, it is unnecessary to wait until the late evening to plug the CS 3-Phase's connector into the vehicle. Even though the vehicle may immediately request a charge, the timer will cause the CS 3-Phase to delay energizing the cable until the off-peak hours when most electric utilities have light demand. With this feature, the Green CHARGING light will blink while the vehicle is waiting for the timer to allow charging. If this feature is desired, please call the local utility to be sure the Time of Use meter is available before having the timer installed. Technical information to help connect the timer to the CS 3-Phase can be found in the section titled **Load Management Inputs** on **page 19** in this manual.

Cold Load Pickup: This feature is built-in to the CS 3-Phase, but will only be apparent when the utility power fails during charging. If the charging connector is still plugged into the vehicle when utility power is restored, the Green CHARGING light will blink and the unit will not energize the cable for a random time between 2 and 12 minutes. This is to prevent the utility's grid from experiencing a large surge at turn-on, allowing EV's in the area to begin drawing current at random times rather than all at once.

NOTE The vehicle does not require the operator's attention after a power outage. The CS 3-Phase will automatically resume charging when power is restored.

External Error Indication: Whenever the Red PROTECTION light turns on, a relay on the board will provide a contact closure that can be used to remotely indicate that a problem exists. A fleet vehicle yard, for example, could use this feature to light a lamp or ring a bell in the main office, indicating that a vehicle has a charging problem. This early warning helps assure that each vehicle will be properly charged and ready for use when needed.

Maintenance Current: If the unit is set up for Off-Peak Charging as described above, normal charging current cannot be drawn by the vehicle until the Off-Peak hours. However, the CS 3-Phase can be set up to allow a minimum amount of current while waiting for the timer to allow full-rate charging. This is known as **Maintenance Current**, used for all power needs on the vehicle except charging the main battery pack. An example would be preheating the cab, or keeping the auxiliary battery topped off. As in the Off-Peak mode above, the Green CHARGING light will flash if the vehicle is connected and waiting for the timer to allow charging. The contactor will close immediately to supply this small amount of power, but the main battery pack will not be allowed to charge.

The **Maintenance Current** feature can be selected by connecting the Timer's control wire to the High/Low Pin on the 4-terminal Terminal Block.

Connecting to the High/Off Pin will remove all power from the vehicle until the Off-Peak Charging time arrives. The correct Pin can be identified using the wiring diagram for the CS 3-Phase on **page 17** of this manual. The other two pins on the terminal block are the relay contacts for the External Indicator.

In summary, making the best use of the **Maintenance Current** feature will require the following:

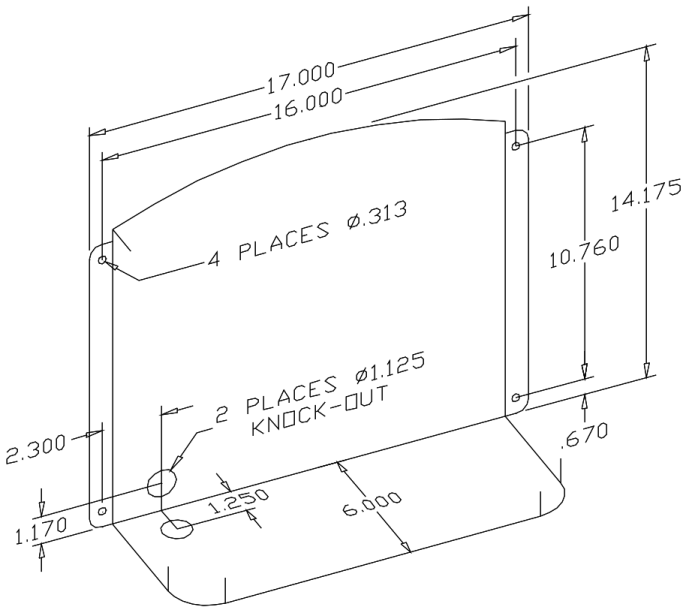
1. Installation of a Time-Of-Use meter by the electric utility.
2. Installation of a clock/timer to allow the CS 3-Phase to charge only during Off-Peak hours.
3. Connecting the timer's control wire to the High/Low Pin on the Terminal Block.

MOUNTING PROCEDURES

1. Locate the wall mounting position of the EVSE:

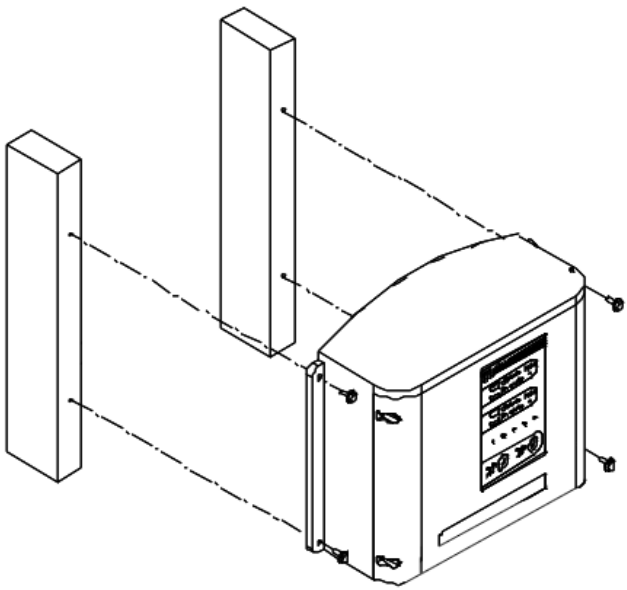
- Position the bottom of the EVSE enclosure 38” above the ground.
- The mounting holes are spaced 16” apart to accommodate common wall studs.
- If there is no solid structural framing on those centers, provide an adequate alternative mounting surface for the EVSE.

Figure 2. CS 3-Phase Installation Template



2. Remove the applicable knock-out in the EVSE, push the power leads through the hole, then connect the power conduit to the hole.
3. Use a multi-set or equivalent if mounting on a concrete wall.
4. Attach the EVSE to the wall studs using four (4) ¼ x 2½" lag screws.
5. After mounting, continue the installation using the Service Wiring Instructions beginning on **Page 14.**

Figure 3. Wall Mounting of CS 3-Phase



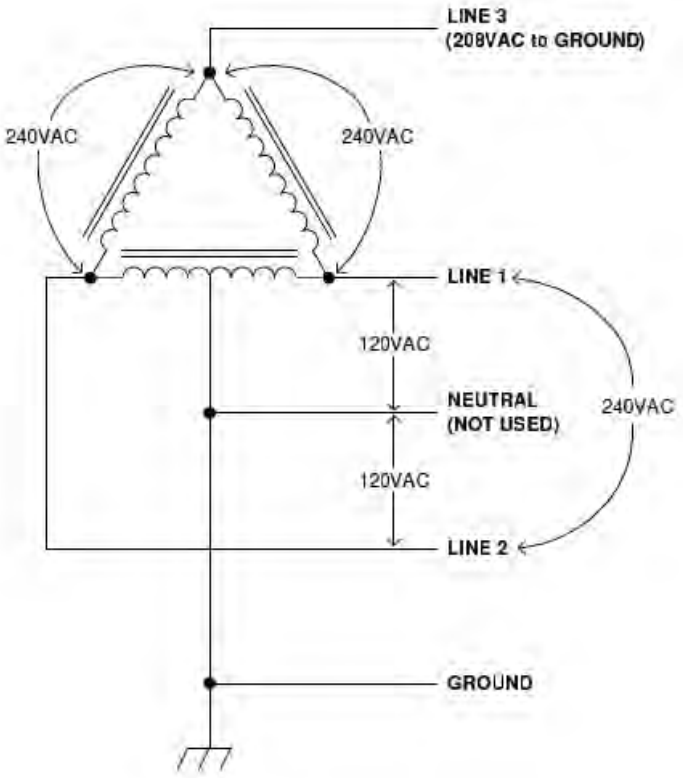
INSTALLATION - SERVICE WIRING

Delta Service Connections

This EVSE is configured for use with 3-phase AC power. Either Delta or Wye service connections can be used. Delta-feed service connections to the EVSE must be made in a specific manner, adhering to the following requirements:

1. One winding MUST BE CENTER TAPPED. This center tap must be connected to **EARTH GROUND** at some point in the system.
2. **LINE 1** and **LINE 2** must be drawn from the phases at each end of the center-tapped winding. This provides 120VAC to EARTH GROUND for both **LINE 1** and **LINE 2**.
3. **LINE 3** is drawn from the 208VAC "Stinger" phase. See **Figure 4**.

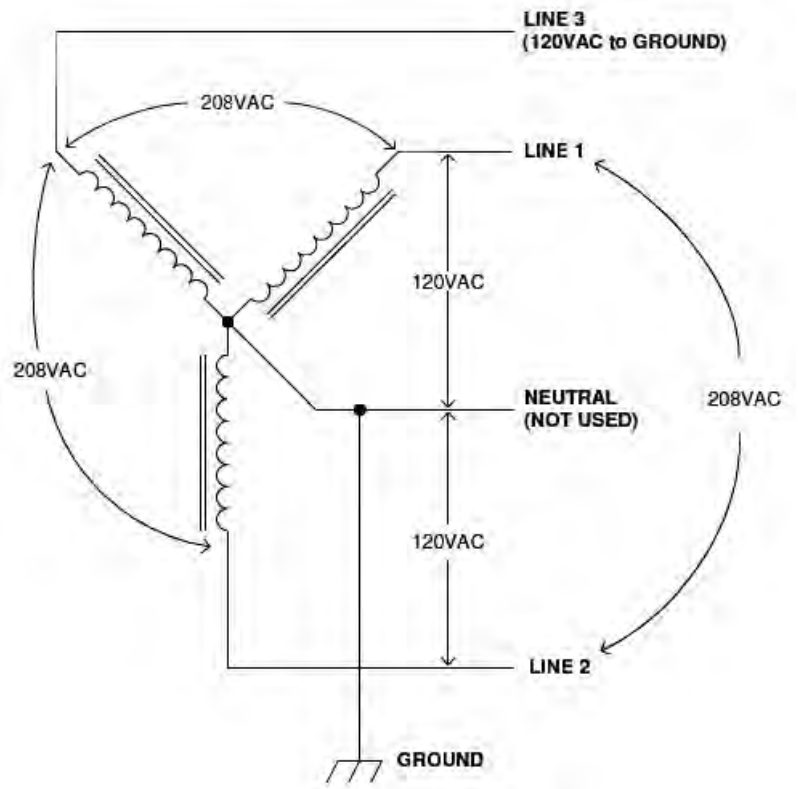
Figure 4. Delta Service Connections



Wye Service Connections

Wye transformer service connections require that the NEUTRAL leg be connected to **EARTH GROUND** somewhere in the system. The **LINE 1**, **LINE 2**, and **LINE 3** phases should all measure 120VAC with respect to **EARTH GROUND**. See **Figure 5**.

Figure 5. Wye Service Connections

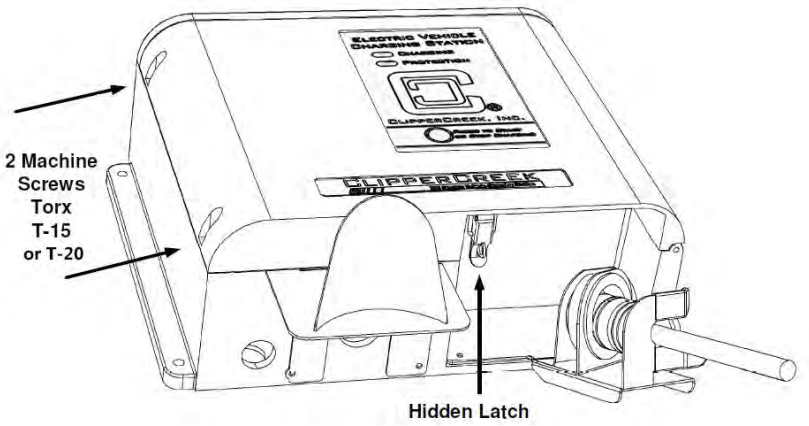


Front Door Hidden Latch

To open the enclosure, perform the following:

1. Unfasten the two (2) machine screws on the left edge of the enclosure lid.
2. Unlatch the hidden latch located underneath the enclosure inside of the connector compartment.

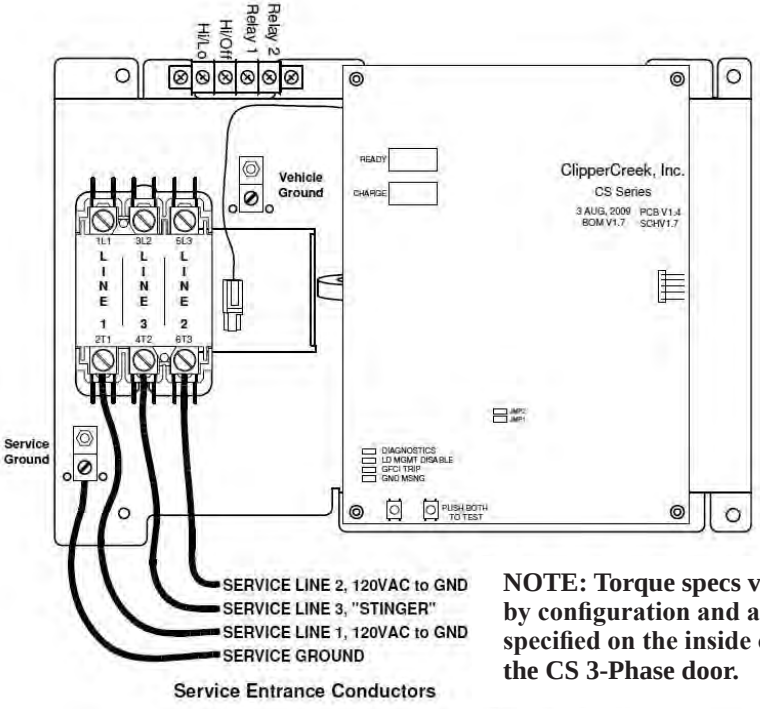
Figure 6. Front Door Hidden Latch



NOTE: A T15 or T20 Torx driver is needed to open the door.

Service Connections

Figure 7. Service Cable Wiring Diagram for 3-Phase AC Charging



NOTE: Torque specs vary by configuration and are specified on the inside of the CS 3-Phase door.

- The **GROUND** conductor should connect to the Service Ground terminal lug located at the bottom left corner of the chassis.
- The **LINE 1** 120VAC conductor should connect to the left-most contactor input terminal labeled “2T1.”
- The **LINE 3** 120V AC or 208V AC “Stinger” conductor should connect to the central contactor input terminal labeled “4T2.”
- The **LINE 2** 120VAC conductor should connect to the right-most contactor input terminal labeled “6T3.”
- The CS 3-Phase requires a dedicated 208/240V AC 50/60Hz, three phase circuit, with its own dedicated three phase circuit breaker.
- Do not use a GFCI breaker with the CS 3-Phase. The CS-3 Phase contains a Personnel Protection circuit that is the equivalent and specifically designed for use with electric vehicles.

- Only four wires are needed to wire the CS 3-Phase (Line 1, Line 2, Line 3, and Service Ground), as shown in **Figure 7**. Wire the unit from the breaker panel using wire sized according to local electrical codes. The circuit breaker should be rated to the appropriate size for the current draw. Derating a three phase breaker 20% for continuous duty allows for 80% of continuous current. For example, derating an 80A three phase breaker 20% for continuous duty allows 64A of continuous current.
- The three phases (Line 1, Line 2, & Line 3) are terminated on the input side of the contactor itself, as shown in **Figure 7**. The Service Ground is terminated on the Ground Terminal at the bottom of the inner chassis.
- Be careful not to damage the PC Board when removing the power-entry knockout, attaching the conduit, or when wiring the service conductors to the contactor.

Testing After Installation

- Apply utility power, and observe that only the Diagnostic LED flashes on the circuit board. If it does not flash, the board may be defective.
- The Charge Test buttons on the PC board simulate connection to a vehicle. Push and hold the two Charge Test buttons at the same time. The contactor should close, and the large Green CHARGING light should turn on.
- If a vehicle is available, connect the CS 3-Phase to the vehicle and verify that the contactor closes and the Green CHARGING light turns on.

INSTALLATION IS COMPLETE.

OPTIONAL SERVICE CONNECTIONS

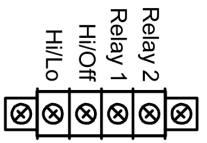
Load Management Inputs:

If the unit has been configured for Off-Peak Charging, the Green CHARGING light may blink after plugging the cable in, and the contactor may not close. This means that a timer, or other device, has been connected to the Load Management input, and charging will not occur until a specified time, possibly later in the evening when electrical rates are better. To override this feature and begin charging immediately, push the Start/Stop button.

Pressing the Start/Stop button will alternately Stop and Re-Start charging. The button will not initiate charging unless the cable is connected, and the vehicle requests a charge.

There are two Load Management inputs, labeled High/Low and High/Off, on a terminal block as shown in **Figure 8** below. Grounding High/Off will completely inhibit charging until it is released. Grounding High/Low will tell the CS 3-Phase to send a signal to the vehicle instructing it not to charge, but instead to draw only a minimum amount of current for auxiliary uses such as cooling down the battery pack, or pre-heating the cab in the early morning.

Figure 8. Four-Position Terminal Block



Load Management
Terminal Block Inputs

Relay Output:

The two terminals labeled Relay 1 & 2 are dry contacts that are normally open. If the Protection light comes on, or if other internal problem is sensed by the CS 3-Phase's computer, these contacts will close. This can be used to power a remote indicator to warn the user that a problem exists, giving them the opportunity to correct the problem and help ensure the vehicle will be charged when needed.

FOR THE SERVICE TECHNICIAN

There are four small LEDs on the PC board to help diagnose problems:

Diagnostic: This is the "heartbeat" of the system. When only this LED is slowly flashing, the system has not detected any failures. If it is on but not flashing, the board is defective. If the LED is not slowly flashing, either no power is applied or the board is defective.

To test the system, press and hold the two Charge Test buttons simultaneously. If the contactor closes, the CS 3-Phase is operating normally. If a vehicle is available, connect the charging cable. The contactor should close. If not, the charging cable or vehicle socket may be defective, or the vehicle is not requesting a charge.

If the CS 3-Phase detects an internal failure, the Diagnostic LED will blink at a faster rate. One of the other LEDs may also turn on and indicate the nature of the problem, such as an inoperative Ground Fault circuitry, or a missing Service Ground.

Load Management Disable: Turns on, in conjunction with a slow-blinking Diagnostic LED, when either the Cold Load Pickup or External Timer mode are active. This is not a failure mode, merely a status indicator. The front panel green Charge LED will blink. The CS 3-Phase's cable must be connected to a vehicle for this LED to blink. The front panel light will be off when the cable is not connected.

GFCI Trip: Turns on when the unit has detected a ground fault. When a fault has occurred, the contactor will open, the front panel Red PROTECTION light will also turn on, and the Diagnostic LED will be flashing at a faster rate. The system waits 5 minutes after sensing a fault, then automatically attempts recovery. After several such attempts, it will stay in the Protection mode.

If a ground fault error or an EV connection error has been detected:

1. Remove the EV connector from the vehicle.
2. Inspect the connector and the vehicle charge port. Be sure they are clean and undamaged.
3. Reconnect to the vehicle. If the fault condition persists, a problem may exist on the vehicle.
4. Refer to the vehicle owner's manual for instructions on inspecting and cleaning the charge port.
5. Plug the EV connector back into the vehicle.
6. If the ground fault error is still detected, contact a Customer Service Representative for assistance.

Ground Missing: Turns on when the unit has detected a missing Service Ground. CS 3-Phase will not close the contactor until a proper Service Ground has been connected. The front panel Red PROTECTION light will turn on, and the Diagnostic LED will flash at a faster rate.

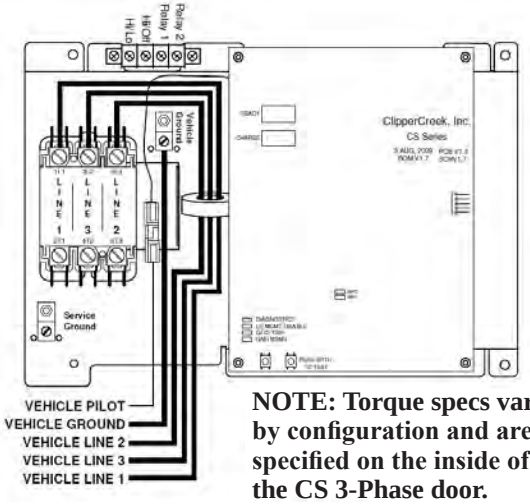
NOTE If a missing ground is discovered, power should be turned off before re-connecting the ground. If ground is reconnected without turning off the power, it will be necessary to wait 5 minutes for the CS 3-Phase to clear the Ground Missing error. **Table 2** below illustrates the information that can be obtained from the 4 LEDs on the PC board.

Table 2. PC Board Diagnostics LEDs

Status	LED 1	LED 2	LED 3	LED 4
	Diagnostic Blink Rate	Load Mgmt Disable	GFCI Trip	Ground Missing
Normal Operation	slow	--	--	--
Charging	slow	--	--	--
Charge Disabled	slow	ON	--	--
CCID Trip	fast	--	ON	--
Ground Missing	fast	--	--	ON
Service Required	fast	--	--	--

Note: A (--) symbol indicates the LED is off.

Figure 9. Vehicle Cable Wiring Diagram for 3-Phase AC Charging



NOTE: Torque specs vary by configuration and are specified on the inside of the CS 3-Phase door.

Cable Changes or Replacement:

- When connecting the output cable, verify that both of the 120V AC (**LINE 1** and **LINE 2)** conductors and the **LINE 3** conductor all pass through the CCID sense coil, as shown **Figure 9.**
- The **GROUND** conductor should go to the Vehicle Ground terminal lug located near the rear wall of the chassis, and should NOT pass through the CCID coil.
- Connect the **PILOT** line to the small gauge blue Anderson connector. The pilot line must not pass through the **CCID** sense coil.

When the conductors are connected, the circuit breaker can be turned on to power the unit. When power is first applied, the unit will go through an initial self-testing sequence when it will check the CCID, Ground Monitor, and other internal circuitry. The Diagnostic LED in the lower left corner of the board will then blink. The unit is ready for use. Plugging the vehicle charging connector into a vehicle should initiate a sequence that will close the contactor, and charging will begin. The unit may be tested without plugging it into a vehicle. Simply press and hold the CHARGE TEST buttons simultaneously and measure the charging connector output with a DVM.

MAINTENANCE

The CS 3-Phase requires no periodic maintenance other than occasional cleaning.

WARNING: To reduce the risk of electrical shock or equipment damage, do not allow liquid to enter unit while cleaning it.

1. Turn off the EVSE at the circuit breaker before cleaning.
2. Clean the EVSE using a soft cloth lightly moistened with mild detergent solution. Never use any type of abrasive pad, scouring powder, or flammable solvents such as alcohol or benzene.

CUSTOMER SUPPORT

Call a ClipperCreek, Inc. Service Representative at any time, 24 hours a day, at 877-694-4194. **PLEASE HAVE THE MODEL NUMBER AND SERIAL NUMBER AVAILABLE WHEN CALLING.** This information is found on the side of the enclosure. If calling after business hours or on weekends, please leave a name, telephone number, the unit serial number, and a brief description of the problem. A Service Representative will call back at the earliest opportunity.

Distributor Service Number Here

SPECIFICATIONS FOR CS 3-PHASE

Line Input Power - Service Entrance

Voltage & Wiring: 208V AC 3-phase, **Wye-Connected** - Use all three phases and Safety Ground.
240V AC 3-phase, **Delta-Connected** - With center-tap on one leg, contactor L1 and L2, the "Stinger" must connect to the contactor center position. L1 and L2 must measure 120V AC to ground; the "Stinger" must measure 208V AC to ground.

Voltage Range: 185V AC to 264V AC

Frequency: 50/60 Hz

CCID: 20mA

Current and Output Power: at 240V

3 Phase	Breaker	Max Current	Max Output Power
CS-20-3	20A	16A	6.7kW
CS-25-3	25A	20A	8.3kW
CS-30-3	30A	24A	10.0kW
CS-40-3	40A	32A	13.3kW
CS-50-3	50A	40A	16.6kW
CS-60-3	60A	48A	20.0kW
CS-70-3	70A	56A	23.2kW
CS-80-3	80A	64A	26.6kW
CS-90-3	90A	72A	29.9kW
CS-100-3	100A	80A	33.2kW

Dimensions:

Height	304 mm (12in)
Width	457 mm (18in)
Depth	203 mm (8in)

Color: Gray

Cable Length: approximately 7.6mm (25ft)

Weight (without cable) 16.5 kg (36 lbs)

Environment

Operating Temp.	-30°C (-22°F) to +50°C (+122°F)
NEMA Rating:	NEMA 4 - outdoor use, watertight
Timer Connection:	Ground to disable charging, leave open to charge. 12 volts with 1K source resistance when open circuit, 12mA sink current when grounded.
Error Relay Contacts:	Dry contact, 24V AC/DC max, 5A current max, closed if error present.
Agency Approvals:	ETL, cETL Listed, FCC Part 15 Class B

WARRANTY INFORMATION

LIMITED WARRANTY – EVSE

MODEL CS 3-Phase

ClipperCreek, Inc.
11850 Kemper Road • Auburn, California 95603
877-694-4194
clippercreek.com

ClipperCreek shall provide the following warranty with respect to the Products to Representative, its Sub-Representatives and their customers:

Product 1-year parts, 1-year factory labor
ClipperCreek, Inc. warrants this product to be free from defects in material and workmanship. The warranty period shall commence on the date of installation date (first use). The product installation date must be evidenced and communicated to ClipperCreek by way of the warranty registration card (or its equivalent). The warranty registration card must be filled out completely and accurately, and returned to ClipperCreek within 30 days after installation, and the product installation date shall be within 6 months after the purchase date. If a Product installation date is not communicated to ClipperCreek as described above, the product purchase date shall serve as the warranty commencement date.

If this product is defective in materials or workmanship during the warranty period, ClipperCreek will, at its option, repair or replace the product. Repair parts and /or replacement products may be either new or reconditioned at ClipperCreek's discretion. This limited warranty does not cover service or parts to repair damage due to improper installation or use, including but not limited to improper connections with peripherals, external electrical faults, accident, disaster, misuse, abuse or modifications to the product not approved in writing by ClipperCreek. Any service repair outside the scope of this limited warranty shall be at applicable rates and terms then in effect.
All other express and implied warranties for this product including the warranties of merchantability and fitness for a particular purpose, are hereby disclaimed.
Some states do not allow the exclusion of implied warranties or limitations on how long an implied warranty lasts, so the above limitation may not apply.

If this product is not as warranted above, your sole and exclusive remedy shall be repair or replacement as provided above. In no event will ClipperCreek, any of its authorized sales and service representatives, or its parent company be liable to customer or any third party for any damages in excess of the purchase price of the product.

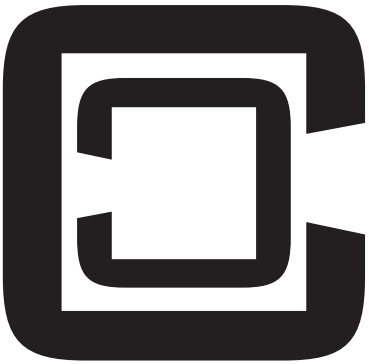
This limitation applies to damages of any kind including any direct or indirect damages, lost profits, lost saving or other special, incidental, exemplary or consequential damages whether for breach of contract, tort or otherwise or whether arising out of the use of or inability to use the product, even if ClipperCreek or an authorized ClipperCreek representative or dealer has been advised of the possibility of such damages or of any claim by any other party. Some states do not allow the exclusion or limitation of incidental damages for some products, so the above limitation or exclusion may not apply.

This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

To obtain warranty service:
Call your nearest authorized Service Representative or ClipperCreek at the above number. You will receive information as to how service for the product will be provided.

If you mail or ship the product in for service, you must insure the product, prepay all shipping charges, and properly pack it for shipment in its original shipping container or its equivalent. You are responsible for all loss or damage that may occur in transit.

You must provide proof of purchase of the product and the purchase date before any warranty service can be performed.



ClipperCreek, Inc.
11850 Kemper Rd., Suite E
Auburn, CA 95603
www.ClipperCreek.com

L3X DCFC Specification

The EVP-FC-50-001 is shown in the following diagram. It is also available in a Slim-Line version that is only 10” deep.

The following table provides the specification for this charger:

Input Power	480VAC, 3-Phase
Output Power	480V nominal/ 500V maximum 104A nominal/ 125A maximum
Output upgrade capabilities	Not upgradable
Connector Types	SAE Combo Chademo
Standard Cable Length	18ft – add’l length available
Cable Management	Overhead retractor ADA compliant
Communication	4G LTE Cellular
Enclosure Rating	NEMA 3R
User interface	15” color display in dispenser
Regulatory Compliance	ETL Listed for USA and Canada; Complies with UL 2594, UL 2231-1, UL2231-2, NEC Article 625, ADA Compliant
Operating Temperature	-30°C to +50°C (-22F to 122F)

Storage Temperature	-30°C to +50°C (-22F to 122F)
Humidity	85% non-condensing

CONSTRUCTION NOTES

1. GENERAL
A. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE PRINCIPLES OF GOOD CONSTRUCTION PRACTICE.
B. DURING THE CONSTRUCTION PERIOD THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY (INCLUDING FIRE SAFETY) OF THE NEW, AS WELL AS EXISTING, STRUCTURES. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES. ANY DEVIATION FROM SUCH ORDINANCES MUST BE APPROVED PRIOR TO ERECTION. THAT RESPONSIBILITY SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.
C. THE CONTRACTOR SHALL CHECK ALL INFORMATION ON THE PLANS (INCLUDING DIMENSIONS) PRIOR TO COMMENCING THE WORK. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER, AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
D. ALL CONSTRUCTION WORK (INCLUDING, BUT NOT LIMITED TO, MEANS, METHODS, SEQUENCES, TECHNIQUES, PROCEDURES, ETC.) IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
THE RECOMMENDATIONS (IF ANY) ON THESE PLANS REGARDING THE MEANS, METHODS, SEQUENCES, TECHNIQUES, PROCEDURES, ETC. OF CONSTRUCTION SHALL BE CONSIDERED AS MINIMAL REQUIREMENTS. THE CONTRACTOR SHALL NOT DEVIATE FROM THESE RECOMMENDATIONS UNLESS SUCH DEVIATION IS TOWARD MORE STRINGENT REQUIREMENTS.
E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF WORKING CONDITION OF ALL EXISTING COMPONENTS AND STRUCTURES AFFECTED BY THIS CONSTRUCTION. THE CONTRACTOR SHALL CONSTANTLY KEEP THE AREA OF CONSTRUCTION FROM ACCUMULATION OF WASTE MATERIALS AND DEBRIS. AT THE END OF WORK, THE CONTRACTOR SHALL REMOVE ALL WASTE, SURPLUS MATERIAL, TOOLS, AND EQUIPMENT.
F. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONJUNCTION WITH THIS PROJECT EXCEPT FOR LIABILITY RISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER. ANY LIABILITY BY SGE AS RELATED TO THIS PROJECT IS LIMITED TO THE ENGINEERING FEES RECEIVED FOR THE SERVICES RENDERED.

2. DESIGN CONSIDERATIONS
A. THESE STRUCTURAL PLANS AND CALCULATIONS WERE DEVELOPED BY SGE RESTRICTIVELY IN REGARD TO THE FOUNDATION AND ACHORAGE FOR THE INSTALLATION OF AN ELECTRIC VEHICLE CHARGING KIOSK, SS=2.5, S1 = 0.8.
B. THIS DESIGN DOES NOT CONSIDER THE STRUCTURAL ADEQUACY OF THE EQUIPMENT (LEGS, BASEPLATES, AND CONNECTIONS BETWEEN THESE MEMBERS BY OTHERS). FOR THE PURPOSES OF THIS DESIGN, ALL NEW EQUIPMENT WAS ASSUMED TO BE STRUCTURALLY ADEQUATE.
C. ALL MATERIALS, STRUCTURES, AND WORKMANSHIP SHALL CONFORM TO THESE PLANS, CALCULATIONS, AS WELL AS TO THE ESTABLISHED GUIDELINES SET FORTH BY 2010 CBC / 2009 IBC, AISC MANUAL OF STEEL CONSTRUCTION (13TH EDITION), ACI 318-08, AND OTHER APPLICABLE REGULATORY DOCUMENTS. IN CASE OF ANY CONFLICTS IN SPECIFICATIONS, THE ONE(S) OF THE APPLICABLE CODE SHALL GOVERN.
D. THESE PLANS AND CALCULATIONS ARE BASED UPON THE ASSIGNMENT FROM, AS WELL AS ON THE INFORMATION ABOUT, THE NEW EQUIPMENT, AS PROVIDED BY FUJI ELECTRIC INC.
E. THIS DESIGN SHALL BE USED EXCLUSIVELY BY FUJI ELECTRIC INC., AS WELL AS THEIR CONTRACTOR(S). ANY OTHER USE (INCLUDING, BUT NOT LIMITED TO, REVIEW, DISSEMINATION, OR COPYING) OF THESE DESIGN MATERIALS AND ANY PORTION THEREOF, AS WELL AS AN USE OF THOSE MATERIALS BY ANY PARTY OR PARTIES OTHER THAN THE ONES SPECIFIED ABOVE, ARE STRICTLY PROHIBITED UNLESS UNDER A WRITTEN PERMISSION BY SGE.
F. DO NOT SCALE THE PLANS.
G. THESE PLANS SUPERSEDE ANY OTHER PLANS PREVIOUSLY ISSUED BY SGE FOR THE SUBJECT JOB.
H. THE MEASUREMENTS SHOWN ON THE PLANS ARE BASED UPON THE CATALOGUED (IDEAL) DIMENSIONS OF THE EQUIPMENT. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS AGAINST THOSE OF THE TEMPLATE AND/OR OF THE ACTUAL EQUIPMENT PRIOR TO ANY CONSTRUCTION ACTIVITIES.

3. LOADS
THESE STRUCTURAL PLANS AND CALCULATIONS WERE BASED UPON THE FOLLOWING MINIMAL LOADS COMPLIANT WITH CHAPTER 16 OF THE 2010 CBC / 2009 IBC AND ASCE 7-05 (REFER TO SEISMIC PARAMETER SCHEDULE). 4 / S1

A. WIND DESIGN DATA	
BASIC WIND SPEED (3-SECOND GUST), MPH	105
WIND IMPORTANCE FACTOR	1
WIND EXPOSURE	C
B. EARTHQUAKE DESIGN DATA	
SITE CLASS	D
SPECTRAL RESPONSE COEFFICIENTS	
SS	2.500
S1	0.800
SDS	1.667
SD1	0.800
SEISMIC DESIGN CATEGORY	E
ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE

4. SOILS
A. THE DESIGN WAS BASED UPON THE MINIMUM REQUIREMENTS BELOW THOSE OF THE 2010 CBC / 2009 IBC SECTION 1804 AND 2010 CBC / 2009 IBC TABLE 1804.2.
B. SOIL UNDER THE NEW STRUCTURES SHOULD BE CLAY, SANDY CLAY, SILTY CLAY, OR CLAYEY SILT WITH ALLOWABLE CAPACITY OF 1500 PSF WITH 1/3 INCREASE FOR SEISMIC AND WIND LOADING. THE SOIL PRESSURE UNDER THE NEW EQUIPMENT PAD IS NOT EXPECTED TO EXCEED 200 PSF UNDER THE DEAD AND LIVE LOADS, AND 500 PSF UNDER DEAD, LIVE, AND SEISMIC LOADS.
C. CONTRACTOR SHALL IMMEDIATELY INFORM SGE IF SOILS OF DIFFERENT NATURE OR PROPERTIES (GROUND WATER, APPARENTLY LOWER CAPACITY SOILS, OR AGGRESSIVE SOILS) WERE ENCOUNTERED DURING THE CONSTRUCTION.
D. THE CONTRACTOR SHALL LOCATE, REMOVE, OR PROTECT ALL UNDERGROUND PIPING, CONDUITS, VAULTS, ETC. AS REQUIRED BY THE APPLICABLE CODE AND JURISDICTION.
E. THE NEW FOOTINGS SHALL NOT BE PLACED AT THE FOLLOWING LOCATIONS:
a. OVER ANY EXISTING STRUCTURE, AND/OR CAST AGAINST SUCH STRUCTURES;
b. CLOSER THAN 6" (CLEAR) TO, ANY EXISTING FOOTINK:
c. CLOSER THAN 24" TO ANY EXISTING WALL:
d. AT/ABOVE EXISTING RETAINING WALLS UNLESS FURTHER AWAY (CLEAR) THAN THE DEPTH OF THE WALL.
ANY OF THE ABOVE CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF SGE PRIOR TO THE BEGINNING OF CONSTRUCTION OR UPON DISCOVERY. NO WORK SHALL BE CONDUCTED ON THE FOOTINGS AT SUCH LOCATIONS UNTIL WRITTEN AUTHORIZATION BY SGE.
F. AS A MINIMUM, THE SOIL IMPROVEMENTS SHALL INCLUDE THE FOLLOWING.

BASE COMPACTED TO 90% RELATIVE COMPACTION PER ASTM D1557.
A MINIMUM OF 8-INCH DEEP LAYER OF SOIL UNDERLYING THE BASEROCK SHALL BE SCARIFIED AND RECOMPACTED TO MINIMUM 90% RELATIVE COMPACTION.
G. ALL EARTHWORK IS RECOMMENDED TO BE CONDUCTED UNDER THE GUIDANCE OF A REGISTERED GEOTECHNICAL OR CIVIL ENGINEER.
H. A GEOTECHNICAL ENGINEER FAMILIAR WITH THE SITE IS RECOMMENDED TO REVIEW THESE PLANS, AS WELL AS THE EXCAVATION AND IMPROVEMENTS OF SOIL. THE PLACEMENT OF REBARS AND CONCRETE IS RECOMMENDED NOT TO COMMENCE WITHOUT A WRITTEN AUTHORIZATION (MEMO) FROM THE GEOTECHNICAL ENGINEER STATING THE ADEQUACY OF

5. NEW CONCRETE
A. ALL (N) REINFORCED CONCRETE STRUCTURES SHALL BE OF NORMAL WEIGHT (145 PCF) CONCRETE WITH MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
B. CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A MINIMUM OF FIVE (5) DAYS AFTER PLACEMENT. ALTERNATE METHODS WILL BE APPROVED IF SATISFACTORY PERFORMANCE CAN BE ASSURED.
C. THE SURFACE OF ALL NEW CONCRETE SHALL BE FLAT (1/8" MAX. UNFLATNESS UNDER 10-FT STRAIGHTEDGE), AND SHALL HAVE ROUGH BROOM FINISH. FORM 3/4" CHAMFERS AT ALL EXPOSED EDGES OF CONCRETE. UNO, THE SURFACE OF CONCRETE SHALL SLOPE AT 0.75% MAX. FOR DRAINAGE.
D. CONCRETE SURFACE TO ASSURE FULL AND UNIFORM CONTACT WITH EQUIPMENT BASEPLATES. IF NECESSARY, USE EPOXY GROUTING UNDER BASEPLATES (SIKAGROUT 212 OR APPROVED EQUAL).
E. UNLESS SPECIFICALLY AUTHORIZED BY SGE, INSTALLATION OF EQUIPMENT MAY BEGIN NOT EARLIER THAN 7 DAYS AFTER POURING OF CONCRETE.
F. SPECIAL INSPECTION OF CONCRETE (2010 CBC / 2009 IBC CHAPTER 17) IS NOT REQUIRED (DESIGNED AS 2500 PSI CONCRETE).

6. REINFORCING STEEL
A. UNLESS NOTED OTHERWISE, ALL (N) REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A615 GRADE 60. ALL REBARS CONNECTED BY, OR SUBJECTED TO, WELDING SHALL BE OF ASTM SPECIFICATION A706.
B. ALL REINFORCING STEEL SHALL BE SPLICED WITH CLASS B SPLICES. SPLICE LENGTHS SHALL BE AS FOLLOWS:

		MINIMUM SPLICE LENGTH		
		TOP REBAR		BOTTOM REBAR
PAD THICKNESS		>12"	<12"	ANY
REBAR SIZE	#4	25"	19"	19"
	#5	32"	25"	25"
	#6	38"	29	29
	#7	43"	33"	33"
	#8	50"	38"	38"
	#9	62"	48"	48"

C. REBARS SHALL BE HELD IN THE REQUIRED POSITION BY MEANS OF APPROVED DEVICES.
D. REBAR SPACING SHOWN IS MAXIMUM DISTANCE BETWEEN REBAR CENTER LINES.
E. REBARS SHALL BE CLEAN OF DIRT, OIL, SCALE, AND FOREIGN MATERIALS.

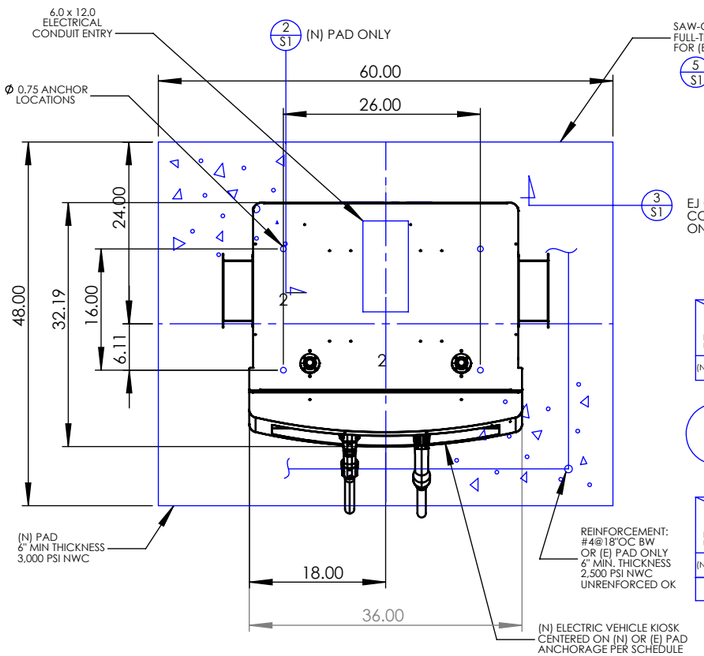
7. EXISTING CONCRETE PADS
A. ALL EXISTING PADS SHALL BE OF 2,500 PSI NWC AND MEASURE AT LEAST 4'X4'. PADS SHALL HAVE A MINIMUM THICKNESS OF 6".
B. IF THE KIOSK IS PLACED ON AN (E) PAD MEASURING MORE THAN 8'X8', AND HAVING THICKNESS OF 6", THE PAD SHALL BE SAW CUT FULL-THICKNESS TO FORM A 8'X8' PAD.
C. FOR ALL CONDITIONS OTHER THAN THE ONES DESCRIBED ABOVE, CONTACT SGE.
B. FOR THE PURPOSES OF THIS DESIGN, THE EXISTING PAD IS ASSUMED TO BE STRUCTURALLY SOUND, FLAT, LEVELED, AND CORRESPOND TO THE ABOVE REPORTED SPECIFICATIONS. UNDER SUCH ASSUMPTIONS, THE PAD WAS FOUND TO BE GENERALLY STRUCTURALLY ADEQUATE AND SUITABLE FOR THE INSTALLATION OF THE NEW KIOSK. WITH THE ASSUMPTION OF 2,500 PSI NORMAL WEIGHT CONCRETE, THE EXISTING PAD, FOR STRUCTURAL PURPOSES, DOES NOT REQUIRE REINFORCEMENT.
C. PRIOR TO THE NEW INSTALLATION, THE CONTRACTOR SHALL INVESTIGATE THE CONDITION AND CONFIGURATION OF THE EXISTING PAD. IN CASE OF DISCOVERY OF ANY CONDITIONS DEVIATING FROM THE ONES OUTLINED ON THESE PLANS OR PREVENTING THE SPECIFIED INSTALLATION, THE CONTRACTOR SHALL STOP ALL WORK AND IMMEDIATELY NOTIFY SGE.

8. POST-INSTALLED ANCHORS
A. POST-INSTALLED ANCHORS SHALL BE USED FOR THE CONNECTION OF THE EQUIPMENT.
B. ALL POST-INSTALLED ANCHORS SHALL BE HILTI KWIK BOLT TZ PER ICC ESR1917 AND OTHER APPLICABLE DOCUMENTS (FOR EXAMPLE, COLA RR 25701).
D. SPECIAL INSPECTION (2010 CBC / 2009 IBC CHAPTER 17) IS REQUIRED DURING THE INSTALLATION OF THE ANCHORS.
E. FOR (N) PADS, UNLESS SPECIFICALLY AUTHORIZED BY SGE, INSTALLATION OF THE ANCHORS AND EQUIPMENT MAY BEGIN NOT EARLIER THAN 7 DAYS AFTER POURING OF CONCRETE.
F. USE EQUIPMENT BASEPLATES AS A TEMPLATE FOR THE INSTALLATION OF THE ANCHORS. REFER TO PLANS BY OTHERS FOR THE ORIENTATION OF THE EQUIPMENT ON THE PADS.
G. INSTALL ALL SPECIFIED ANCHORS IN STRICT COMPLIANCE WITH THE AFOREMENTIONED
H. ABBREVIATIONS

9. ABBREVIATIONS

BCD	BOLT CIRCLE DIAMETER
BW	BOTH WAYS
CL	CENTERLINE
CLR	CLEAR
CONT	CONTINUOUS
DIA	DIAMETER
EA	EACH
(E)	EXISTING COMPONENT
(F)	FUTURE COMPONENT
EMB	EMBEDMENT
HORIZ	HORIZONTAL
LAR	LIQUID ARGON
LIN	LIQUID NITROGEN
LONGIT	LONGITUDINAL
LOX	LIQUID OXYGEN
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW COMPONENT
NIC	NOT IN THIS CONTRACT
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	CENTER-TO-CENTER
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
REINF	REINFORCEMENT
RPT	REPORT
STD	STANDARD
TB	TOP AND BOTTOM
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TRANSV	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL

THE SHOWN MINIMAL DISTANCES TO THE PAD EDGES, ANCHOR EDGE DISTANCES, NUMBER AND TYPE OF ANCHORS, AND EQUIMENT CLEARANCE DISTANCES SHALL BE MAINTAINED.
FOR SITE PLAN, EQUIPMENT LAYOUT AND ORIENTATION, AND OTHER INFORMATION REFFER TO PLANS BY OTHERS.
FOR ADDITIONAL INFORMATION, REFER TO CONSTRUCTION NOTES, PARTICULARLY, TO SECTIONS:
"SOILS"
"NEW CONCRETE"
"REINFORCEMENT"
"POST-INSTALLED ANCHORS"
"EXISTING CONCRETE PADS"



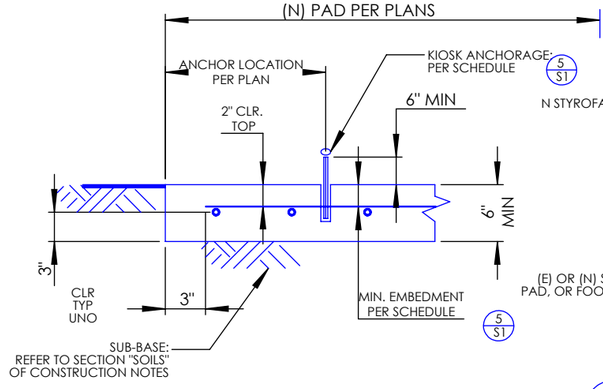
1 (N) OR (E) PAD AND KIOSK ANCHOR LAYOUT
PLAN, SCALE: 1" = 1"-0"

DESING PARAMETER / EQUIPEMENT UNIT	WEIGT/MASS	HEIGHT	SEISMIC DESING DATA (STRENGTH)				
	KIPS	FT	I/Ip	R	RP	SEISMIC COEFF.	BASE SHEAR KIPS
(N) ELECTRIC VEHICLE KIOSK	1.0	6.1	1/1	2	2.5	0.833	0.83

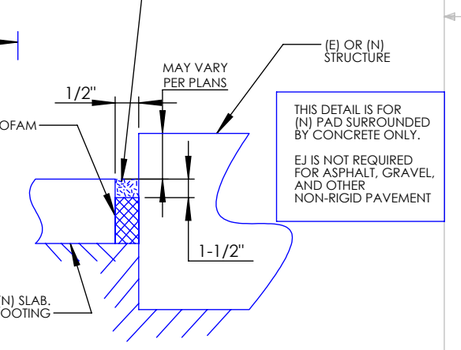
4 SEISMIC DESING PARAMETER SCHEDULE

ANCHORAGE / EQUIPEMENT UNIT	MECH. ANCHORS, TYP - SPECIAL REQ'D HILTI KWIK BOLTZ PER ICC ESR1917					
	Ø IN	EMB. IN	STEEL	EXT. IN	# PER LEG	# PER UNIT
(N) ELECTRIC VEHICLE KIOSK	5/8	4	SS	-	-	4
REFER TO PLANS AND CONSTRUCTION NOTES FOR ADDITIONAL INFORMATION						

5 ANCHORAGE SCHEDULE



2 (N) PAD AND ANCHORAGE
TYP, SECTION, NTS



THIS DETAIL IS FOR (N) PAD SURROUNDED BY CONCRETE ONLY.

EJ IS NOT REQUIRED FOR ASPHALT, GRAVEL, AND OTHER NON-RIGID PAVEMENT

3 EXPANSION JOINT (EJ)
TYPICAL SECTION, NTS

UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES	DRAWN	ANDRES	05/07/13
TOLERANCES:	CHECKED		
FRACTIONAL ±	ENG APPR.	DH	05/07/13
ANGULAR: MACH ± BEND ±	Q.A.		
TWO PLACE DECIMAL ±			
THREE PLACE DECIMAL ±	COMMENTS:		

MATERIAL: SEE NOTE #3
FINISH: SEE NOTE #4

BTC Power Inc.

TITLE:
INSTALLATION OF ELECTRIC VEHICLE CHARGING KIOSK 50 KW

SIZE	DWG. NO.	REV
B	EVP-FC-50-001	A
SCALE: 1:20	WEIGHT:	SHEET 1 OF 1

www.btcpower.com

BTCPower 25KW/50KW
DC Fast Charger
Installation and Maintenance Manual

PLEASE NOTE

This user's manual includes the latest information at the time of printing. BTCP reserves the right to make changes to this product without further notice. Changes or modifications to this product by other than an authorized service facility could void the product warranty.

If you have questions about the use of this product, contact your customer service representative.

This product is should be operated by trained personnelonly.

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SAVE THESE INSTRUCTIONS

This manual contains important instructions for DC Fast Charger that shall be followed during installation, operation and maintenance of the unit

1. SAFETY

1.1 Important Safety Instructions

WARNING ELECTRIAL DANGER – PLEASE READ 

READ THIS MANUAL BEFORE YOU BEGIN

EVSE (Electric Vehicle Supply Equipment) manages electricity and may be hazardous. Failure to follow the below precautions and the Danger, Warning and Caution instructions in this manual may result in serious injury. Follow all rules, codes and laws that apply to your area and installation guidelines.

This equipment should be installed, adjusted and serviced by qualified electrical personnel familiar with the construction and operation of this type of equipment and the hazards involved. Failure to observe this precaution could result in death or severe injury.

Read this manual completely prior to installation and energizing the equipment. Inspection and maintenance of this equipment should be performed in accordance with the operating procedures detailed in this manual

The purpose of this manual is to provide you with information necessary to safely operate, maintain, and troubleshoot this equipment. Keep this manual for future reference.

DO NOT use this product if the EV cable is damaged in any way, cracked or open insulation or any other sign of wear.

THE INFORMATION CONTAINED WITHIN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE.

1.2 Symbols and Definitions

The following symbols may be found in your handbook or on labels affixed to your conductive charge station:

	ELECTRICAL WARNING	This symbol indicates high voltage. It calls your attention to items or operations that could be dangerous to you and other persons operating this equipment. Read the message and follow the instructions carefully failure to do so may result in severe injury or possibly death.
	WARNING	Warning indicates a hazard or unsafe situation which, if not avoided, may result in severe injury or possibly death.
	CAUTION	Caution indicates a hazard or unsafe practice which, if not avoided, may result in minor injury
	NOTE	Important information to consider, otherwise, improper installation and/or damage to components may occur.

1.3 Dangers and Cautions

1.3.1 Operation Warnings

When installing the equipment and during regular operation, please ensure the charge station's supply cable is located in such a way that the cable will not be tripped over, stepped on, pulled on, or somehow subjected to damage or stress during normal operation or while stored.

1.3.2 Maintenance Warnings

WARNING 

There are no user serviceable parts inside. For service please contact customer service or your local distributor. **DO NOT ATTEMPT TO REPAIR THE CHARGE STATION YOURSELF ONLY FACTORY QUALIFIED PERSONNEL.**

WARNING 

If your supply cable is somehow damaged do not operate your charge station. Contact your service representative for service immediately. Shut down the power to the unit by switching the breaker on the supply panel to the off position.

WARNING 

Turn off input power to your charge station at the circuit breaker panel before servicing or cleaning the unit.

CAUTION 

Do not charge your vehicle indoors if it requires ventilation. Contact your Service representative for information.

1.3.3 Installation Warnings

The EVSE (Electric vehicle supply equipment) should be installed by a qualified electrician in accordance with local codes and all applicable ordinances

WARNING 

This unit is not intended to be used in a commercial garage (repair facility) or closer than 20 feet (508 mm) of an outdoor motor fuel dispensing device.

The charging station is required to be connected to a ground, metal, permanent wiring system. Connections to the charge station should comply with all local codes and ordinances.

Read all installations instructions carefully prior to performing the installation.

1.3.3 Installation Warnings - Continued

WARNING 

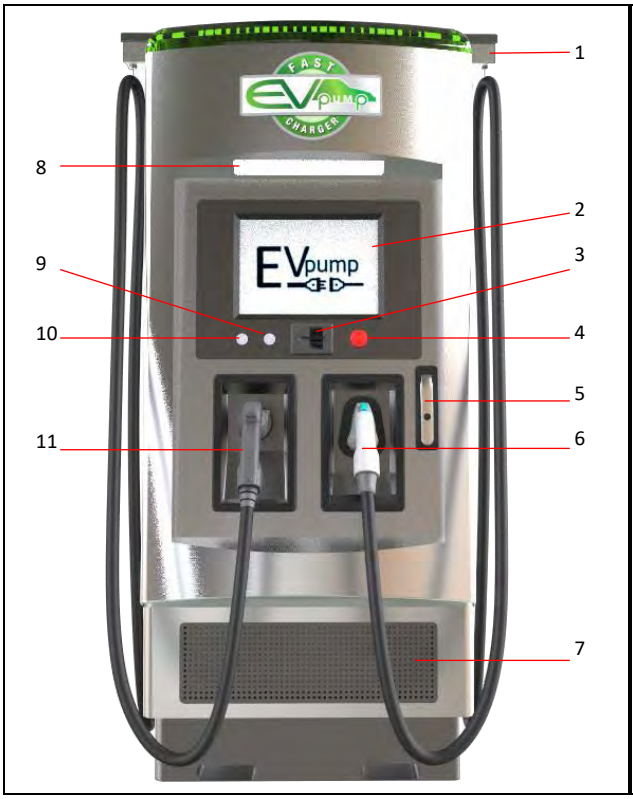
- Charger may be installed outdoors but only use under environments specified within this specification.
- Only qualified personnel should work on this equipment.
- Do not perform any live wire operations.
- Only qualified skilled in electric services personnel shall perform maintenance checks.
- DO NOT touch the inside of the device while it is running.

WARNING 

- **This device includes capacitive components such as electrolytic capacitors. Some parts still remain charged inside of the unit even after the input power is disconnected.**
- This device utilizes high voltages do not attempt to install this equipment if you are not a qualified electrician.

1.4 Charger System Descriptions

Part Names and Functions



1. **Layard Cord Retractor**
2. **15” Outdoor Rated Touch Screen Display**
   - Displays operating states, charging time, charging instructions.
3. **Encrypted Insert Card Reader**
4. **Emergency Stop Button**
   - To be used in an emergency situation to shut down the device.
5. **High Security Lock**
6. **Charging Coupler (Deleted if Single Port)**
   - CHAdeMO, SAE Combo
7. **Air Cooling Vent**
8. **LED Lights**
9. **Stop Button**
   - Use to stop charging incase display malfunctions.
10. **Start Button**
    - Use to start charging incase display malfunctions.
11. **Charging Coupler**
    - CHAdeMO, SAE Combo

Specifications

Model	EVP-FC-25-001	EVP-FC-50-001	
Power Rating	25kW	50kW	50kW
Connectors	CHAdeMO, SAEJ1772 Combo, GB/T 2016		
Network	Credit Cards accepted (Visa, Master, Discover, AMX)		
Input Power	208 VAC 3-Phase	208 VAC, 3-Phase	480 VAC 3-Phase
Input Power Breaker	100A	200A	100A
Efficiency Rating	>90%	>90%	
Max. Output DC Current	52A	100A	
Max. Output DC Voltage	50-500V		
Plug-Out Detection	Power terminated per SAE J1772 specifications or GB/T		
Surge Protection	6000 VAC		
Ambient Condition	-20°C to +50°C, 95% humidity, 6000ft altitude.		
Dimensions	38"w, 72.75"h, 27.6"d	43"w, 72.75"h, 32.25"d	
Safety Compliance	ETL Listed for USA and Canada; Complies with UL 2594, UL 2231-1, UL2231-2, NEC Article 625, ADA Compliant		

2. INSTALLATION

2.1 ADA Considerations

STANDARDS FOR ACCESSIBLE DESIGN for Americans with Disabilities is applicable when choosing the location and placement of all Electric Vehicle Supply Equipment. The following is a direct excerpt from the 2010 ADA Standards for Accessible Design:
http://www.ada.gov/2010ADAstandards_index.htm
"The Department of Justice published revised regulations for Titles II and III of the Americans with Disabilities Act of 1990 "ADA" in the Federal Register on September 15, 2010. These regulations adopted revised, enforceable accessibility standards called the 2010 ADA Standards for Accessible Design "2010 Standards" or "Standards". The 2010 Standards set minimum requirements – both scoping and technical -- for newly designed and constructed or altered State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities.
Adoption of the 2010 Standards also establishes a revised reference point for Title II entities that choose to make structural changes to existing facilities to meet their program accessibility requirements; and it establishes a similar reference for Title III entities undertaking readily achievable barrier removal.
The Department has assembled this online version of the official 2010 Standards to increase its ease of use. This version includes:
2010 Standards for State and Local Government Facilities Title II
2010 Standards for Public Accommodations and Commercial Facilities Title III

The Department has assembled into a separate publication the revised regulation guidance that applies to the Standards. The Department included guidance in its revised ADA regulations published on September 15, 2010. This guidance provides detailed information about the Department's adoption of the 2010 Standards including changes to the Standards, the reasoning behind those changes, and responses to public comments received on these topics. The document, Guidance on the 2010 ADA Standards for Accessible Design, can be downloaded from:
http://www.ada.gov
For information about the ADA, including the revised 2010 ADA regulations, please visit the Department's website www.ADA.gov; or, for answers to specific questions, call the toll-free ADA Information Line at 800- 514-0301 (Voice) or 800-514-0383 (TTY)."

2.2 Choosing a Suitable Location

The following should be considered before choosing a location to install the charger:
- 2010 Standards for Accessible Design
- Municipality/Government standards for placement of Electric Vehicle Supply Equipment
- Wiring and conduit needed to connect the EVSE to the circuit panel
- Location of vehicle charging inlets while parked
- Use of protective bollards and wheel stops to protect the EVSE

2.3 Electrical Service Connections

CAUTION 

This is a three-phase 208 VAC EVSE charger or 480 VAC EVSE charger.

The BTCP EV Fast Charger includes over current protection as required by the National Electric Code and has an integrated UL listed 200 Amp breaker for 50KW (208VAC) unit and 100 Amp breaker for 25KW (208 VAC) and for 50KW (480 VAC) unit. Please refer to NEC Article 625 for installation requirements and check in the installed jurisdiction for any other electrical requirements.
GFCI on panel maybe required if not included in the charge station.

Conduit is to be routed per NEC code standards

25KW Charger 208VAC 3Phase Input **50KW Charger 480VAC 3Phase Input**	**50KW Charger 208VAC 3Phase Input**
3 AWG Line for each phase	3/0 AWG Line for each phase
3 AWG GROUND wire	3/0 AWG GROUND wire

Installing the wires

GROUNDING INSTRUCTIONS – This unit is to be connected to a grounded, metal, permanent wiring system; or an equipment-grounding conductor is to be run with circuit conductors and connected to equipment-grounding terminal or lead on battery charger. Connections to the charger shall comply with all local codes and ordinances.

WARNING 
Lockout / tagout all electrical source circuits feeding the units in the open position before beginning wiring or terminations. Failure to follow the instructions could result in severe bodily injury or death.

WARNING 
The unit is designed for indoor or outdoor installation. If this unit is mounted outdoors, the hardware for connecting the conduits to the unit must be rated for outdoor installation and be installed properly to maintain the proper outdoor / rain tight rating of the enclosure.

Once the enclosure has been situated in its installation location.

**Line 1, Line 2, Line 3, and Ground wires are required, neutral is not required.*

CAUTION 
For 208 VAC equipment the phases used must each measure 120VAC to Neutral. Earth Ground must be connected to Neutral at only one point, usually at the Service Entry Breaker Panel.

CAUTION 
The electrical connection to the BTCP requires four wires. Three 120 VAC lines and a ground wire.

2.4 Electrical Service Connection 480 VAC 3 Phase 50 KW DC Fast Charger

CAUTION

480 VAC EVSE charger.

The BTCP 50 KW, 480 VAC 3 Phase input EV Fast Charger includes over current protection as required by the National Electric Code and has an integrated UL listed 100 Amp breaker for 50KW (480VAC). Please refer to NEC Article 625 for installation requirements and check in the installed jurisdiction for any other electrical requirements.

GFCI on panel maybe required if not included in the charge station.

Conduit is to be routed per NEC code standards

Electrical Connection

Connect 3 phase 480 VAC to Mersen MPDB67013 terminal block. Located in lower DC Fast Charger compartment. Each phase to ground should measure 277 VAC to ground.

MERSEN TERMINAL BLOCK MPDB67013 600 V 3 PHASE 250 A AL 310A CU CU9AL			
LINE		LOAD	
WIRE RANGE	TORQUE (LB - IN)	WIRE RANGE	TORBE (LB - IN)
(1) 350 - 6	275	(2) 2/0-6	120
		(2) 8-14	50

2.5 Mounting Procedures

Tools and ancillary equipment

1. Philips head screw driver.
2. QTY 4, ½" dia x 3 3/4" concrete expansion studs.
3. ½'" torque wrench.
4. 3/16" allen wrench for electrical connections.
5. Keys (shipped with unit), to be used to open the access panels.

Concrete pad installation requirements.
Use 4 (minimum 4) 1/2" dia x 3 3/4" (McMaster-Carr PN R91578A116 or equivalent) concrete expansion studs to anchor the steel pedestal provided with the BTCP EV Charging Station.

WARNING 

BTCP EV Charging Station can only be installed onto undamaged concrete slab.
A minimum of 4 expansion bolts should be mounted on the bottom enclosure footer. In order to install the expansion bolts please follow the following steps:

Installation Steps

1. Drill a hole the proper drill diameter and depth per manufacturers recommendation. Clean hole thoroughly.

   WARNING 

   If the drill hole depth is less than specified, the stud will bottom out prior to full engagement of stud to concrete. This will be evident as the unit will rock or move when pushed.

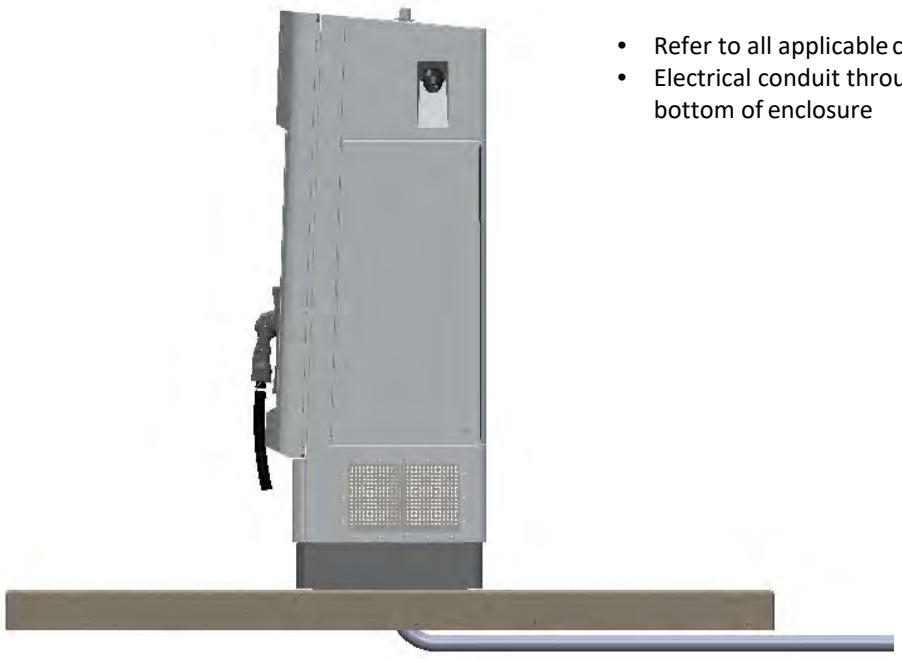
2. Follow manufacturers instruction for installing the studs (McMaster-Carr PN R91578A116).

3. Place the charging station mounting holes over the studs.

4. Install nuts and washer and tighten to the stud manufacturers specified installation torque.

BTCP EV CHARGING STATION is provisioned to receive an electrical power connection from one of two locations.

Option 1: Bottom of the enclosure.
Option 2: Rear of the enclosure through a liquid tight fitting.



- Refer to all applicable codes.
- Electrical conduit through the bottom of enclosure

Figure 1.
EVSE Side view

OPTION 2: ELECTRICAL WIRING REAR CONNECTION.

In cases where the concrete cannot be trenched an electrical connection into the enclosure can be made via the hole provided on the right hand side of the enclosure as shown in Figure 2 & 3.

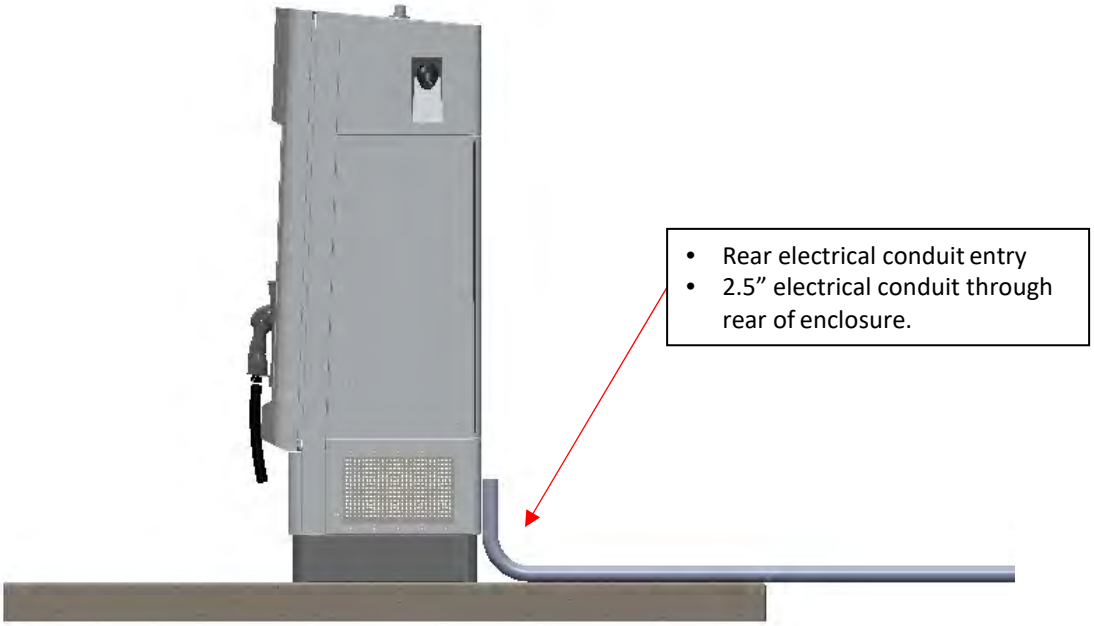


Figure 2.

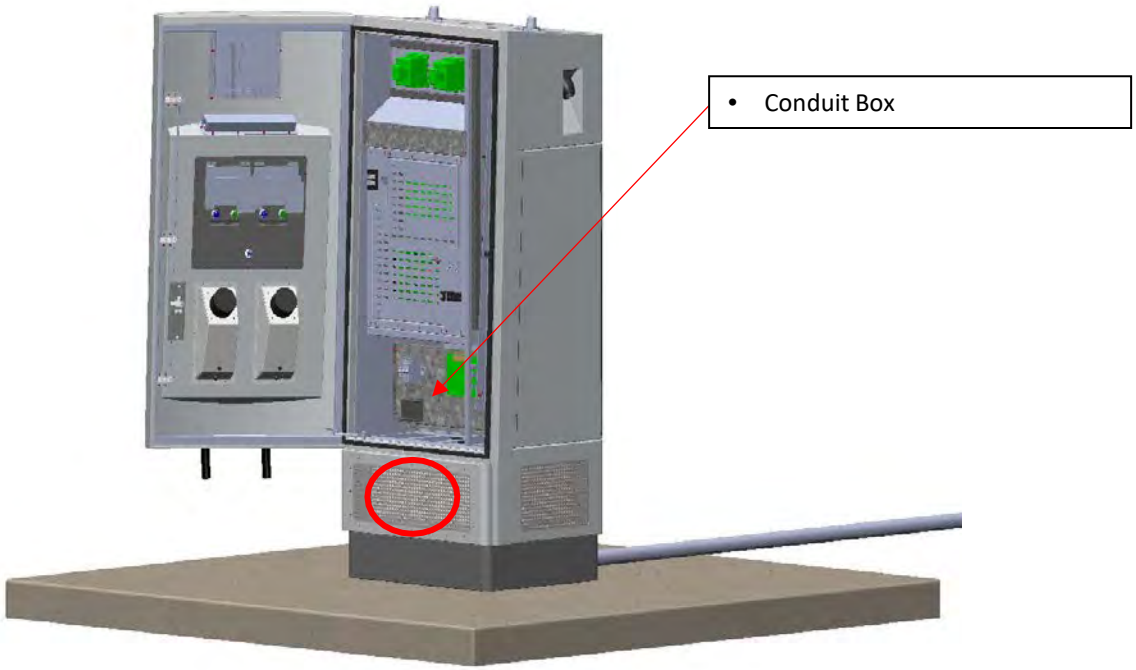


Figure 3.

NOTE:

For testing purposes only, the BTCP EV Charge Station has been fitted with an entry point on the top of the enclosure. This modification voids the NEMA 3 design of the cabinet and should not be installed outdoors.

3. OPERATIONS

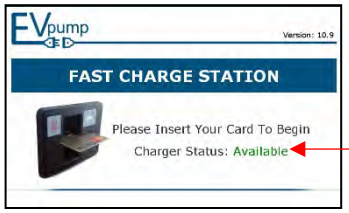
3.1 Charging session and operation procedure

Touch here for CHAdeMO

Touch here for SAE Combo

Screen 1

Screen 1
Welcome Screen.
Choose your connector:
CHAdeMO/ SAE Combo/GBT

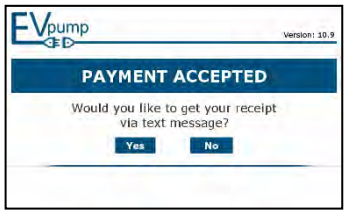


Available only with Payment Option

Charger Status

Screen 2

Screen 2
Insert Credit Card to begin charge session.



Available only with Payment Option

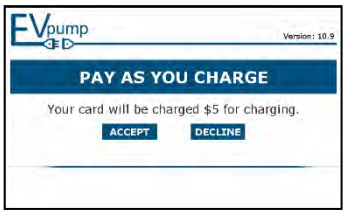
Screen 3

Screen 3
Receipt via text message?
YES – Go to screen 4
NO – Go to screen 5

Available only with Payment Option

Screen 4

Screen 4
Enter the phone number and touch “Enter”



Available only with Payment Option

Screen 5

Screen 5
Your card will be charged $X
Select “ACCEPT” to continue.

Screen 6

Screen 6
Confirm connector is connected properly.
Select “YES” to continue.

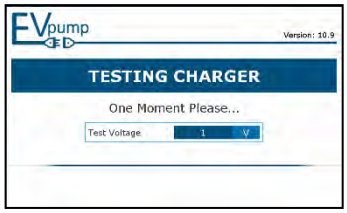
3.1 Charging session and operation procedure –Continued

Screen 7

Screen 7
Press "START" to begin your charge session.

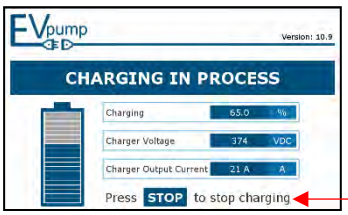
Screen 8

Screen 8
Charger checks communication to the vehicle.



Screen 9

Screen 9
Charger runs self diagnostic test to make sure everything is ok before it begins to charge a vehicle.



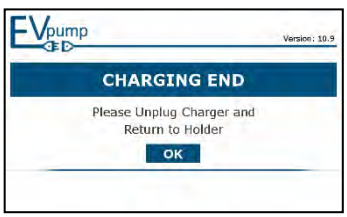
Press STOP to Stop charging

Screen 10

Screen 10
Charging in Process
Current charging info displayed.
To stop charging, press "STOP"

Screen 11

Screen 11
Once charge session is complete, we ask to disconnect the connector from the vehicle.

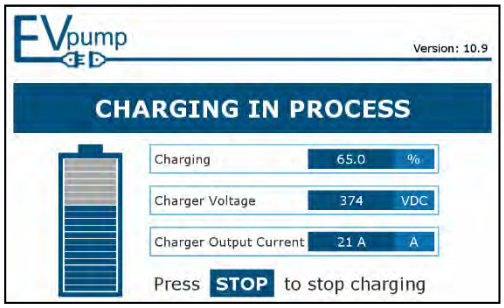


Screen 12

Screen 12
Charging End.

3.2 Stop Procedure.

BTCP EV Charging Station offers 3 ways to stop the charging session.



Option 1. Press STOP on the touch screen

Press STOP on the screen

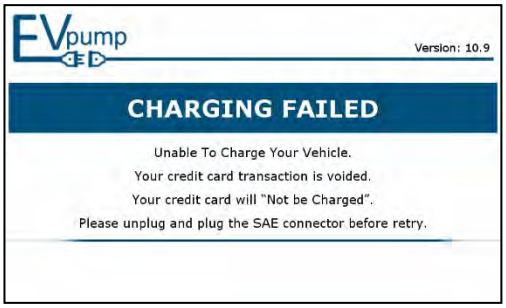
Option 2. Press STOP Button on the Charger

Option 3. Press the EMERGENCY STOP Button

3.3 Time Outs

If for any reason the charge session does not begin within 60 seconds after payment has been processed, CHARGING FAILED screen will display and the credit card transaction gets automatically voided.

In situations like this, user will need to unplug the connector and re-plug before retry.



4. TROUBLESHOOTING

If an error occurs, check the nature of the error by referring to following “Error Code List” and take appropriate actions according to the on-screen instructions.

Error Code	Message	Description	Change
100	No MCU Communication	This is an application fault.	As soon as system resumes, the fault is cleared.
110	Card ready not available	This is an application fault.	As soon as system resumes, the fault is cleared.
120	No internet network	This is an application fault.	As soon as system resumes, the fault is cleared.
200	Not ready from PCM	This is a hard fault that results in “out of service”	Press STOP and then START to restart the application to clear the fault
210	Safety Error	Please turn E-STOP knob to remove error. If fails to start on 2nd attempt, call to customer service no.	Please turn E-STOP knob to Enable Charger. If fails to start on 2nd attempt call to customer service no.
220	Over voltage	This is a hard fault that results in “out of service”	Press STOP and then START to restart the application to clear the fault
230	Over current	This is a hard fault that results in “out of service”	Press STOP and then START to restart the application to clear the fault
240	Over temperature	This is a hard fault that results in “out of service”	Press STOP and then START to restart the application to clear the fault
260	Charger door is open	Front or side door is not completely closed	Please close the door and try again...
270	Emergency Stop	Please turn ESTOP knob to remove error.	Please turn E-STOP knob to Enable Charger
300	Over voltage from vehicle	This error is generated by the vehicle and results in termination of the charge.	Contact Customer Service
310	Under voltage from vehicle	This error is generated by the vehicle and results in termination of the charge.	Contact Customer Service
320	Current deviation from vehicle	This error is generated by the vehicle and results in termination of the charge.	Contact Customer Service
330	High battery temperature	This error is generated by the vehicle and results in termination of the charge.	Suspend charging for a time
340	Voltage deviation error	This error is generated by the vehicle and results in termination of the charge.	Contact Customer Service
250	No CAN communication	Most likely the charge connector is improperly placed.	Reinsert the charge connector and Restart

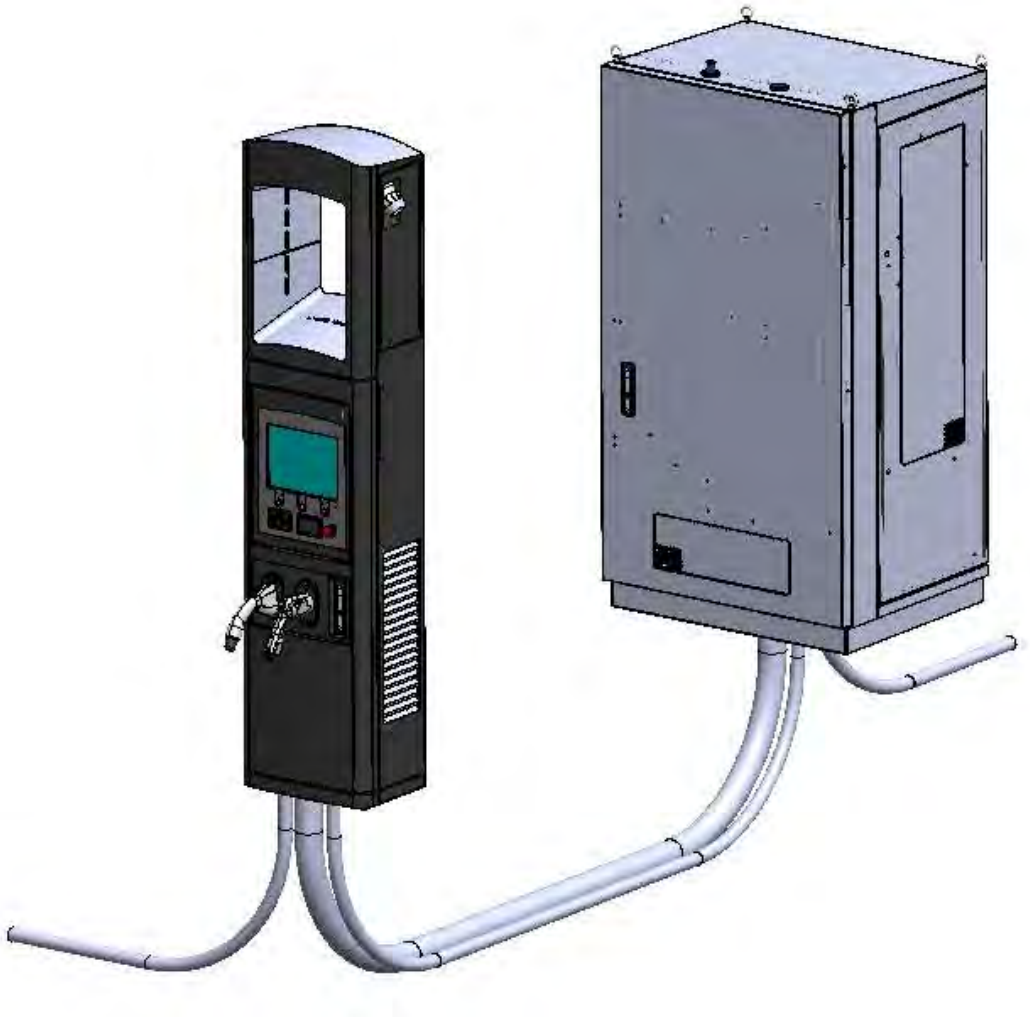
L4 DCFC Specification and Installation Manual

OpConnect provides high-power DC fast charging options. THe BTC Power L4 charger includes both the SAE CCS and Chademo couplers. The Level 4 chargers have a power converter unit, which is what takes the input electric power and conditions it so that it can be output to the electric vehicle, and one or more separate dispenser units, which are what has the RFID, display screen and charger couplers. The power converter unit is usually installed out of site as the driver never interacts with it, and the dispensers are mounted in front of the parking space where the driver will interact with them to charger their EV. One power converter can serve up to 4 dispensers. The figure below shows a 200kW power converter (rear unit) and a single 150kW dispenser (front unit):

BTCPower www.btcpower.com	DOCUMENT TITLE **BTC Power EVSE Power Charger Installation and User Manual**

REVISION HISTORY

Rev	Date	ECN #	Description of BTCPower EVSE	ORIGINATOR
Draft				



200 KW EVSE CHARGER

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PLEASE NOTE

This user’s manual includes the latest information at the time of printing. BTC Power, Inc. (BTCPower) reserves the right to make changes to this product without further notice. Changes or modifications to this product by other than an authorized service facility could void the product warranty.

If you have questions about the use of this product, contact your customer service representative. Refer to the Customer Support section located in this guide.

IMPORTANT SAFETY INSTRUCTIONS

1. Safety Guidelines

WARNING

READ THIS MANUAL BEFORE YOU BEGIN

EVSE (Electric Vehicle Supply Equipment) manages electricity and may be hazardous. Failure to follow the below precautions and the Danger, Warning and Caution instructions in this manual may result in serious injury. Follow all rules, codes and laws that apply to your area and installation guidelines.

IMPORTANT SAFETY INSTRUCTIONS

The following symbols may be found in your handbook or on labels affixed to your conductive charge station:

	**DANGER**	Danger indicates a hazard or unsafe practice which, if not avoided, will result in severe injury or possibly death.
	**WARNING**	Warning indicates a hazard or unsafe practice which, if not avoided, may result in severe injury or possibly death.
	**CAUTION**	Caution indicates a hazard or unsafe practice which, if not avoided, may result in minor injury
	NOTE:	Important information to consider, otherwise, improper installation and/or damage to components may occur.

WARNING

There are no user serviceable parts inside. For service please contact customer service or your local distributor. **DO NOT ATTEMPT TO REPAIR THE CHARGE STATION YOURSELF ONLY FACTORY QUALIFIED PERSONEL.**

WARNING

If your supply cable is somehow damaged do not operate your charge station. Contact your service representative for service immediately. Shut down the power to the unit by switching the breaker on the supply panel to the off position.

2. Installation

Safety instructions

The EVSE (Electric vehicle supply equipment) should be installed by a qualified electrician in accordance with local codes and all applicable ordinances

The charging station is required to be connected to a ground, metal, permanent wiring system. Connections to the charge station should comply with all local codes and ordinances.

Read all installations instructions carefully prior to performing the installation.

WARNING:

This device utilizes high voltages do not attempt to install this equipment if you are not a qualified electrician.

2.1 ADA Consideration

STANDARDS FOR ACCESSIBLE DESIGN for Americans with Disabilities is applicable when choosing the location and placement of all Electric Vehicle Supply Equipment. The following is a direct excerpt from the 2010 ADA Standards for Accessible Design:
http://www.ada.gov/2010ADAstandards_index.htm
"The Department of Justice published revised regulations for Titles II and III of the Americans with Disabilities Act of 1990 "ADA" in the Federal Register on September 15, 2010. These regulations adopted revised, enforceable accessibility standards called the 2010 ADA Standards for Accessible Design "2010 Standards" or "Standards". The 2010 Standards set minimum requirements – both scoping and technical -- for newly designed and constructed or altered State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities.
Adoption of the 2010 Standards also establishes a revised reference point for Title II entities that choose to make structural changes to existing facilities to meet their program accessibility requirements; and it establishes a similar reference for Title III entities undertaking readily achievable barrier removal.

The Department has assembled this online version of the official 2010 Standards to increase its ease of use. This version includes:
2010 Standards for State and Local Government Facilities Title II
2010 Standards for Public Accommodations and Commercial Facilities Title III

The Department has assembled into a separate publication the revised regulation guidance that applies to the Standards. The Department included guidance in its revised ADA regulations published on September 15, 2010. This guidance provides detailed information about the Department's adoption of the 2010 Standards including changes to the Standards, the reasoning behind those changes, and responses to public comments received on these topics. The document, Guidance on the 2010 ADA Standards for Accessible Design, can be downloaded from:
http://www.ada.gov
For information about the ADA, including the revised 2010 ADA regulations, please visit the Department's website www.ADA.gov; or, for answers to specific questions, call the toll-free ADA Information Line at 800- 514-0301 (Voice) or 800-514-0383 (TTY)."

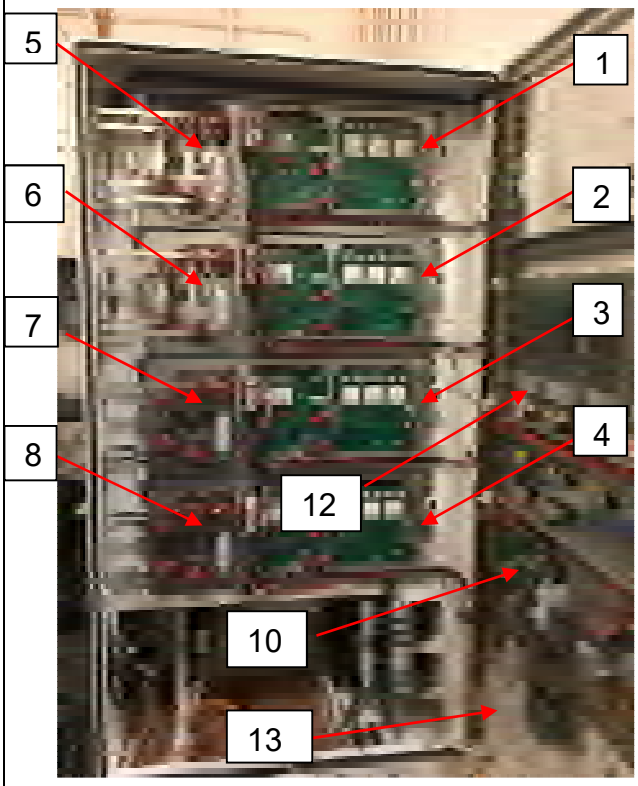
2.2 Equipment Description

WARNING 

- •Charger may be installed outdoors but only use under environments specified within this specification.
- •Only qualified personnel should work on this equipment.
- •Do not perform any live wire operations.
- •Only qualified skilled in electric services personnel shall perform maintenance checks.
- •DO NOT touch the inside of the device while it is running.

WARNING 

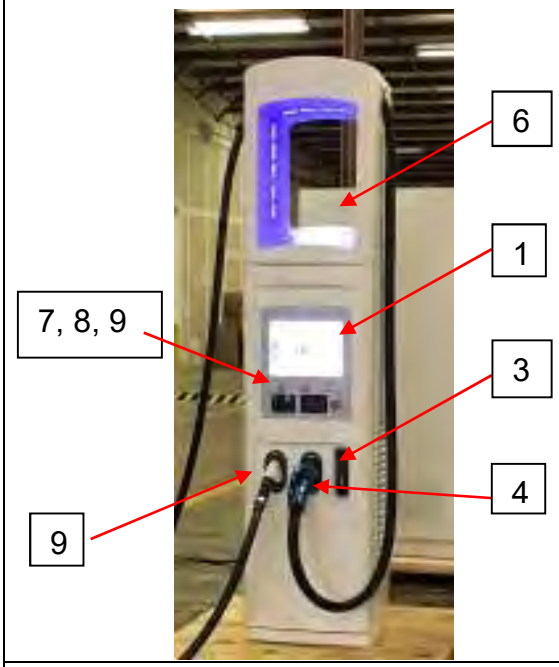
- •**This device includes capacitive components such as electrolytic capacitors. Some parts still remain charged inside of the unit even after the input power is disconnected.**
- •This device utilizes high voltages do not attempt to install this equipment if you are not a qualified electrician.



200 KW Power Enclosure

1. **50kW #1 Power Module**
2. **50 kW #2 Power Module**
3. **50 kW #3 Power Module**
4. **50 kW #4 Power Module**
5. **Output Contactors (+/-) power module #1**
6. **Output Contactors (+/-) power module #2**
7. **Output Contactors (+/-) power module #3**
8. **Output Contactors (+/-) power module #4**
9. **Air Cooling Vent**
10. **Master Controller**
11. **Safety Relays**
12. **24vdc Power Supply**
13. **5, 12, 15,-15 vdc Power Supply**

Component Description



350 KW Charge Dispenser

1. 15-inch outdoor rated display and touch screen.
2. Encrypted insert card reader.
3. High security lock.
4. High powered CHAdeMO coupler.
5. High powered CCS charge coupler.
6. LED lighting.
7. Stop button / Function key 1.
8. Start button / Function key 2.
9. Function key 3.

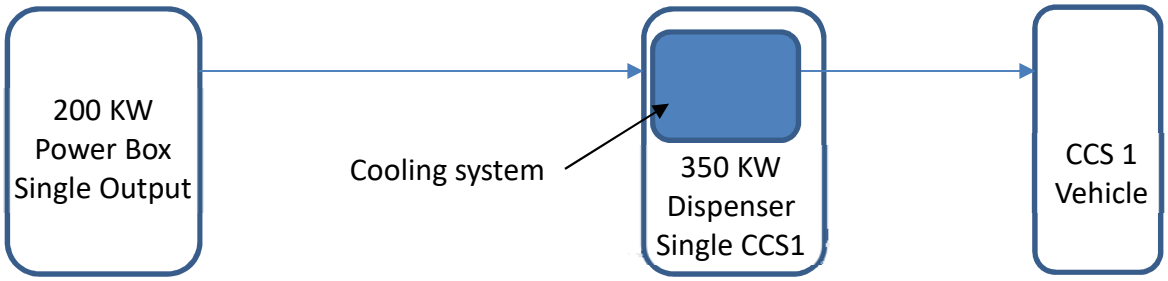
Component Description

Equipment specifications:

System Components:

ITEM	DESCRPTION	PART NUMBER
1	DCFC "Power Box" Dual output	EVPC-200-2-480-3
2	DCFC “Power Box” Single output	EVPC-200-1-480-3
3	DCFC “Power Box” Quad output	EVPC-200-4-480-3
4	DCFC Dispenser, CCS/CHAdeMO	EVDSP-350-5-120-0-2-C-4-0
5	DCFC Dispenser, Dual CCS	EVDSP-350-3-120-0-2-C-4-0
6	DCFC Dispenser, CCS/CHAdeMO	EVDSP-50-5-120-0-2-C-4-0
7	DCFC Dispenser, CCS/CCS	EVDSP-50-4-120-0-2-C-4-0

Simplified Block Diagram of Single System:



350 KW DSP Top level system capabilities (200 KW):

Parameter	Specification
Input voltage	480 VAC 3 Phase +/-10%, (432 – 528 VAC)
Output voltage range, CCS only	200-920 VDC
Output voltage range, CHAdeMO only	50-500 VDC
Maximum output current, CCS only (non – continuous)	500 Amps
Maximum output current, CCS only continuous	500Amps. Please see note below Note: Rating of the H & S liquid cooled cable subsystem is to be evaluated for continuous operation Rating of all other components except H & S liquid cooled cable are rated for continuous 500 Amp operation.

Maximum output current, CHAdeMO only, (non – continuous)	250 Amps
Maximum output current, CHAdeMO only, continuous	200 Amps
System efficiency	Greater than 92%
Power converter efficiency	Greater than 94% at full power
Maximum output power	200 kW
Operating Temperature	-30 C to + 50 C
Operating Altitude	9,320 ft.
Relative Humidity	95% non-condensing
Dispenser input auxiliary power	120 VAC (Single phase), 20 Amps. Both CHAdeMO + CCS and CCS + CCS models.
Connectors available, CCS only	HPC-CCS Huber + Suhner
Connectors available, CHAdeMO only	SEI Sumitomo Electric 200 Amp Continuous SEI Sumitomo Electric 250 Amp Non - Continuous

Top level system capabilities (50 KW):

Parameter	**Specification**
Input voltage	480 VAC 3 Phase +/-10%, (432 – 528 VAC)
Output voltage range, CCS only	200-920 VDC
Output voltage range, CHAdeMO only	50-500 VDC
Maximum output current, CCS only (non – continuous)	125 Amps per output
Maximum output current, CHAdeMO only, (non – continuous)	125 Amps per output
System efficiency	Greater than 92%
Power converter efficiency	Greater than 94% at full power
Maximum output power	50 kW per dispenser output
Operating Temperature	-30 C to + 50 C
Operating Altitude	9,320 ft.
Relative Humidity	95% non-condensing
Dispenser input auxiliary power	120 VAC (Single phase), 20 Amps. Both CHAdeMO + CCS and CCS + CCS models.
Connectors available, CCS only	Rema
Connectors available, CHAdeMO only	SEI Sumitomo Electric 125 Amp Continuous

1. DCFC "Power Box" specifications:

AC to DC Power Converter Specifications (High Output (200KW) Configuration)

	BTC PN: EVPC-200-2-480-3 (Dual Output)	**BTC PN: EVPC-200-1-480-3 (Single Output)**
Parameter	**Specification**	**Specification**
Input Voltage Range	480 VAC, three phases, +10%, -10%	480 VAC, three phases, +10%, -10%
Input Current @ 480 VAC	240 Amps	240 Amps
Frequency	47 – 63 Hz for three phase inputs	47 – 63 Hz for three phase inputs
Power Quality	IEEE-519 and IEC 6200-3-4	IEEE-519 and IEC 6200-3-4
DC Output		
Maximum Power	200 KW	200 KW
Max Output Current	500 Amps CCS, 250 Amps CHAdeMO	500 Amps CCS
Minimum Current (In current mode)	5 Amps	5 Amps
DC Output voltage range	50-920 VDC	50-920 VDC
Efficiency	> 95% (at full load) power stage only	> 95% (at full load) power stage only
Power Factor	> 0.99 full load	> 0.99 full load
Outdoor enclosure	NEMA 4, IP 54 equivalent	NEMA 4, IP 54 equivalent
Dimensions (Refer to DWG 200KW-AFE-T-00.PDF)	80" High, 41" Width, 33" Deep Estimated weight, 1,800 lbs.	80" High, 41" Width, 33" Deep Estimated weight, 1,800 lbs.
Modularity	Power can be switched from one output to the other in increments of 45 kW	
Ripple current	< 15 A p-p, Maximum allowable peak to peak HVDC output current ripple, 1kHz bandwidth limited	< 15 A p-p, Maximum allowable peak to peak HVDC output current ripple, 1kHz bandwidth limited

AC to DC Power Converter Specifications (Low Output (50KW) Configuration)

	BTC PN: EVPC-200-4-480-3 (Quad Output)
Parameter	**Specification**
Input Voltage Range	480 VAC, three phases, +10%, -10%
Input Current @ 480 VAC	240 Amps
Frequency	47 – 63 Hz for three phase inputs

Power Quality	IEEE-519 and IEC 6200-3-4
DC Output	
Maximum Power	50 KW per output 4 simultaneous up to 200 KW
Max Output Current	125 Amps per output
Minimum Current (In current mode)	5 Amps
DC Output voltage range	50-920 VDC
Efficiency	> 95% (at full load) power stage only
Power Factor	> 0.99 full load
Outdoor enclosure	NEMA 4, IP 54 equivalent
Dimensions (Refer to DWG 200KW-AFE-T-00.PDF)	80" High, 41" Width, 33" Deep Estimated weight, 1,800 lbs.
Modularity	Power can be switched from one output to the other in increments of 45 kW
Ripple current	< 15 A p-p, Maximum allowable peak to peak HVDC output current ripple, 1kHz bandwidth limited

AC to DC Power Converter Fault Protection and Safety Features

Converter compliance matrix		
Feature	**Specification**	**Specification**
HI pot withstand	UL 2231-1/2, UL 840	UL 2231-1/2, UL 840
Insulation resistance	UL 2231-1/2, UL 840	UL 2231-1/2, UL 840
Output voltage regulation	+/- 2%, no load	+/- 2%, no load
Over temperature	Self-protected and latched	Self-protected and latched
Input AC Over voltage detection	1msec non-latched	1msec non-latched
Input AC Under voltage detection	1msec non-latched	1msec non-latched
Input AC Over Current	1msec latched	1msec latched
Input AC fused		
Input AC GFCI	GFCI module range 30 mA.	GFCI module range 30 mA.
Output DC over voltage	570 VDC latched	570 VDC latched
Output DC short circuit	Shut down	Shut down
CAN communication loss	1 sec shut down upon loss of connection	1 sec shut down upon loss of connection
AC input surge	6 KV requirement per UL 2231, EMC requirements	6 KV requirement per UL 2231, EMC requirements
External Remote E-Stop	Remove high power if external E-stop is activated	Remove high power if external E-stop is activated

AC Converter – Input terminal block

A Single AC input terminal block is used to connect the AC utility to the AC to DC Power Converter

AC Line Side		Load Side	
Wire Range	Opening per pole	Wire Range	Opening per pole
350-6	2	350-6	2

Torque for all poles: 275 LB-IN

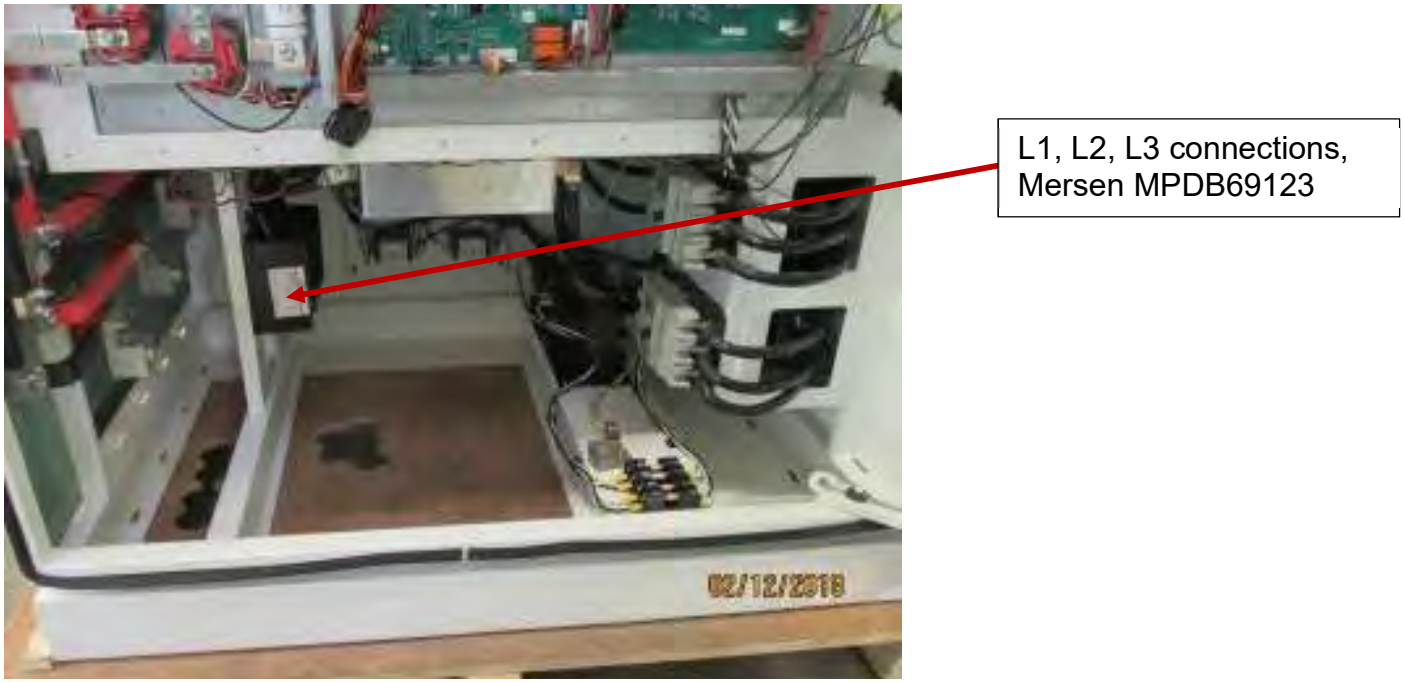


Fig. 1 AC Input

DC Converter - Output terminal block (from converter to dispenser – single and dual high output configuration):

From power stages			
Wire range	Openings per pole (terminal lug)	Terminal Lug NSI Ind. PN	Torque requirement
1000-500	2	1000L2	550 LB-IN

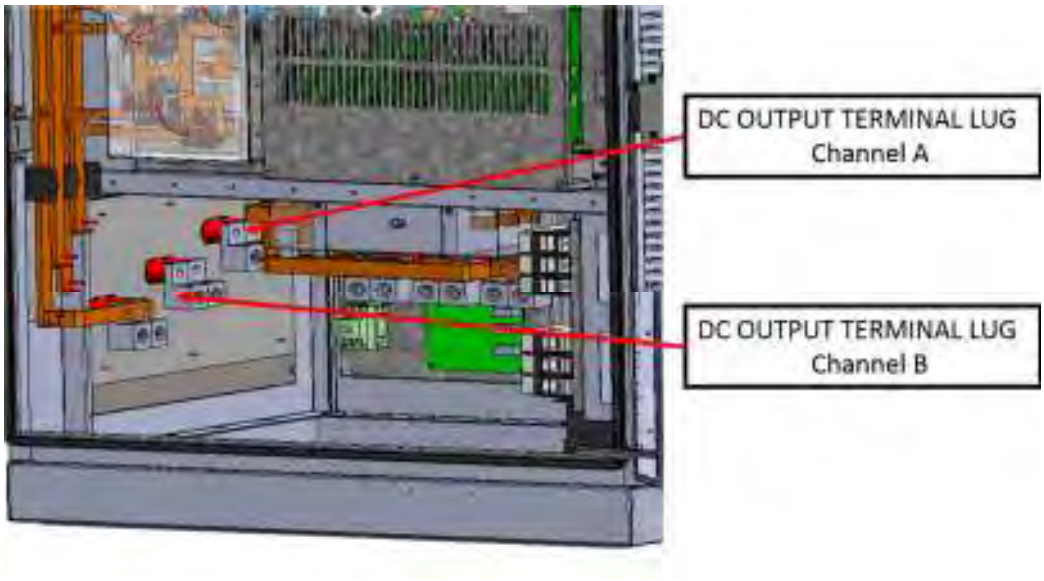


Fig. 2
DC Output Terminal Lugs, Channel A and B.

50 KW Dispenser DC input terminal block and wire gage:

LINE SIDE		PART NUMBER	
WIRE RANGE	OPENINGS PER POLE	PART NUMBER	AMPERE RATING
	Terminal Block	Mersen	
2/0-#14	1	MPDB63153	175

Torque requirement per UL E-file Mersen MPDB63153

Terminal block primary side (from converter)				Terminal block secondary side (to dispenser)			
Wire	**In lbs**	**Wire**	**In lbs**	**Wire**	**In lbs**	**Wire**	**In lbs**
2/0-#6	120	#8-#14	50	2/0-#6	120	#8-#14	50

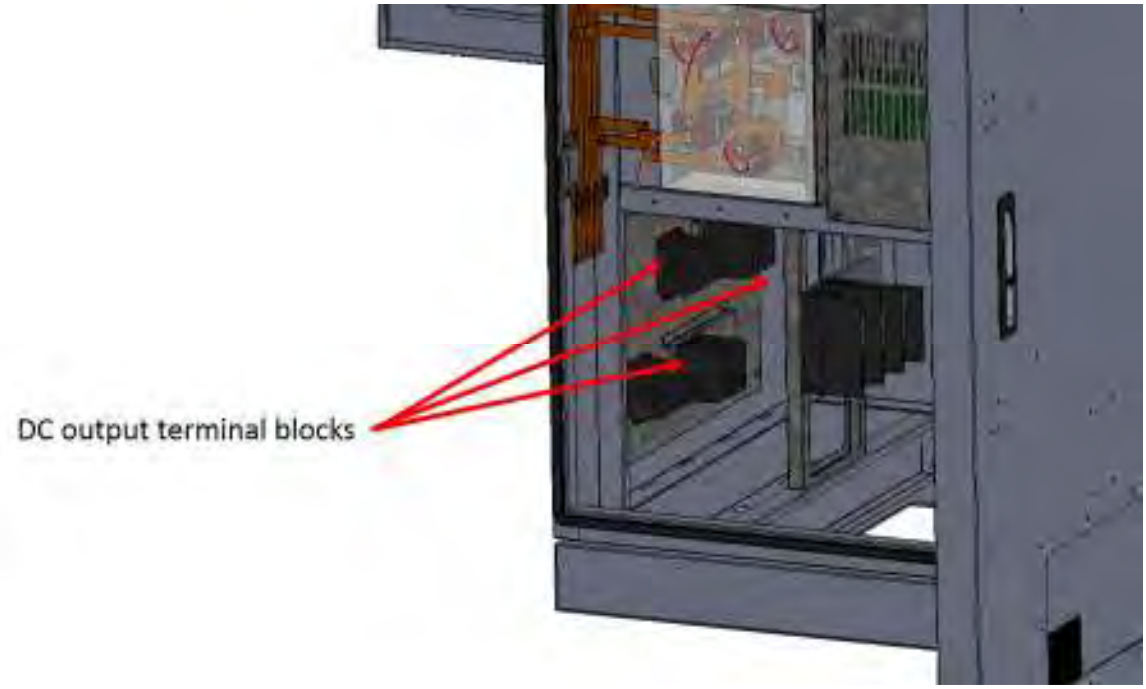


Fig. 3
DC Output Terminal Blocks used for Channel A, B and C (50 KW dispensers)

2. DCFC EVDSP-350-5-480-0-1-C-3-0 (CHAdeMO + CCS)

DC power Dispenser (Dual Cord):

Auxiliary Input Voltage	120 VAC, single phase, +10%, -10%
Auxiliary Input Current	20 Amps
Frequency	47 – 63 Hz for three phase inputs
Power Quality	IEEE-519 and IEC 6200-3-4
Maximum Output Power CCS	350 KW.
Maximum DC Output Current CCS, non-continuous	500 Amps.
Maximum DC Output Current CCS, continuous	**Note:** Rating of the H & S liquid cooled cable subsystem is to be evaluated later for continuous operation Rating of all other components except H & S liquid cooled cable are for continuous 500 Amp operation.
Maximum Output Power CHAdeMO	100 KW.
Maximum DC Output Current CHAdeMO, non-continuous	250 Amps.
Maximum DC Output Current CHAdeMO, continuous	200 Amps
Minimum Current (In current mode)	5 Amps

DC power input voltage range	50-920 VDC
DC power input current range	5 Amps – 500 Amps
Outdoor enclosure	NEMA 4, IP 54 equivalent
Chilled 50/50 ethylene glycol	20 C input Temperature, Flow rate = 10 l/min.
Weight	600 lbs.

3. DCFC EVDSP-350-3-480-0-2-C-3-0 (Dual CCS)

DC power Dispenser (Single Cord):

Auxiliary Input Voltage	120 VAC, single phase, +10%, -10%
Auxiliary Input Current	20 Amps
Frequency	47 – 63 Hz for three phase inputs
Power Quality	IEEE-519 and IEC 6200-3-4
Maximum Output Power CCS	200 KW.
Maximum DC Output Current CCS, non-continuous	500 Amps.
Maximum DC Output Current CCS, continuous	**Note:** Rating of the H & S liquid cooled cable subsystem is to be evaluated later for continuous operation Rating of all other components except H & S liquid cooled cable are for continuous 500 Amp operation.
Minimum Current (In current mode)	5 Amps
DC power input voltage range	50-920 VDC
DC power input current range	5 Amps – 500 Amps
Outdoor enclosure	NEMA 4, IP 54 equivalent
Chilled 50/50 ethylene glycol	20 C input Temperature, Flow rate = 10 l/min.
Weight	600 lbs.

350 / 50 KW Dispenser DC input terminal block and wire gage:

LINE SIDE		PART NUMBER	
WIRE RANGE	OPENINGS PER POLE	PART NUMBER	AMPERE RATING
Units MCM	(Compression Lug)		
1000-250	2	2-1000L2	545

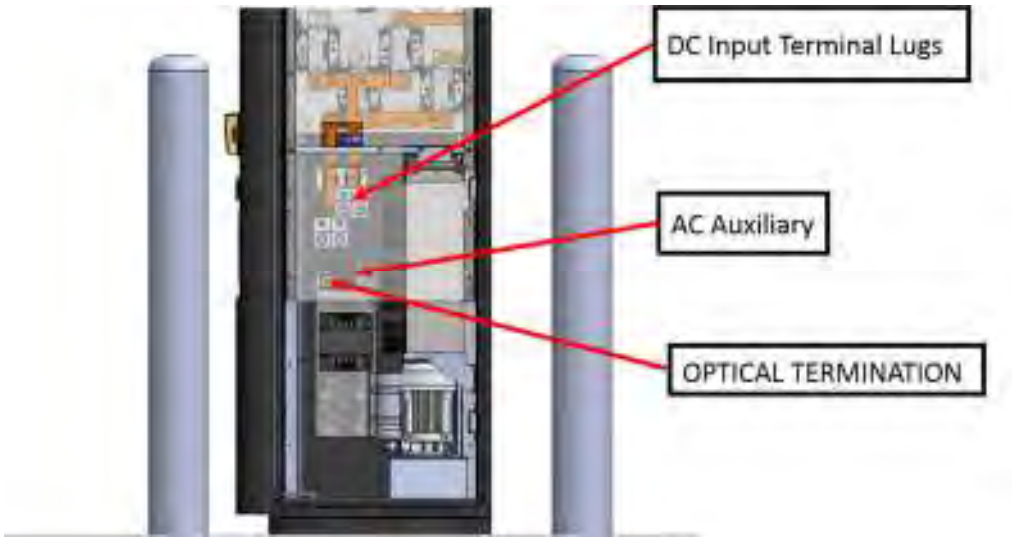
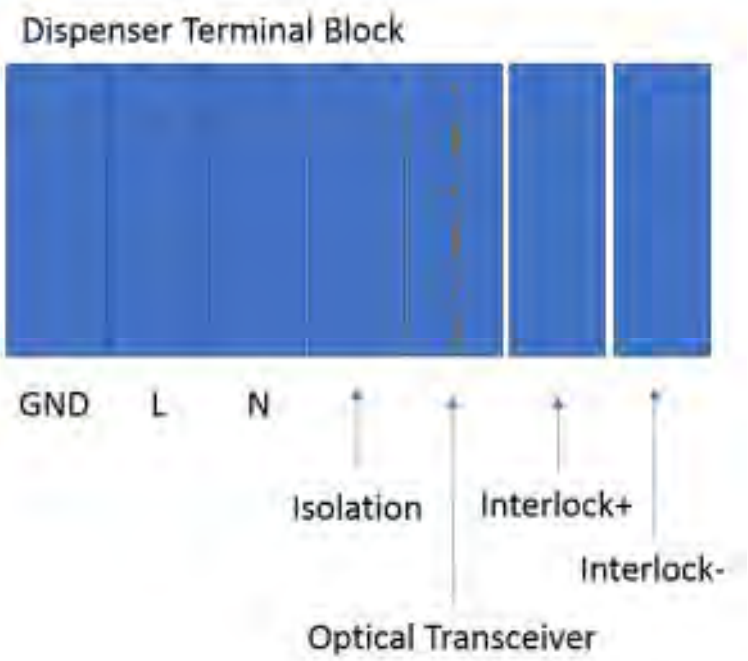


Fig. 3 Dispenser DC Input, Auxiliary, Optical Connection, Auxiliary



Auxiliary – 120 VAC Single Phase, 20 Amps

Optical Transceiver – Connection and fiber requirements.

Low-Speed Fiber Module		Multi-Mode
Fiber Cable Requirements		50/125 µm, 800 MHz
		62.5/125 µm, 500 MHz
Typical Distance		5 km
Wave-length	Typical (nm)	850
	TX Range (nm)	840 to 860
	RX Range (nm)	800 to 900
Optical Power	TX Range (dBm)	0 to -5
	RX Range (dBm)	0 to -20
	Link Budget (dB)	15
	Dispersion Penalty (dB)	1

Suggest: Industrial wide temperature
Interlock – 18 gage twisted pair, shielded. Suggested PN McMaster

4. Output Coupler (Part of Dispenser)

CCS-1, Huber + Suhner high powered liquid cooled coupler.

Cable length for:
CCS 1 System
CCS 2 System

Drawing	
Outside Lenght	☐ 350 cm
	☐ 450 cm
	☐ 500 cm
	☐ 650 cm
	☐ Other
Inside Length	☐ 150 cm (all wires standard)
	☐ Customer specific (please attach specifications/drawings)

- Please refer to Huber + Suhner specification for additional details.
- Cable Length:

- 4.5 meter outside length (standard)
- Optional longer length available

- Cable Management System:
  - None. This will be a non-retractable cable system

5. Electrical and communication service connection

Dispenser requirements.

The dispenser requires the following:

a. DC input from the tower.
b. Auxiliary power from main circuit panel. The auxiliary power is used to power the heat exchanger as well, payment system as well as display module.
c. Communication conduit between the tower and the dispenser. For this purpose, the BTC dispenser and tower utilize optical wire for communication.

Tower (converter) requirements.

a. 480 VAC 3 phase input and ground from the main power cabinet.
b. Communication conduit between the tower and the dispenser.

6. Mounting procedures

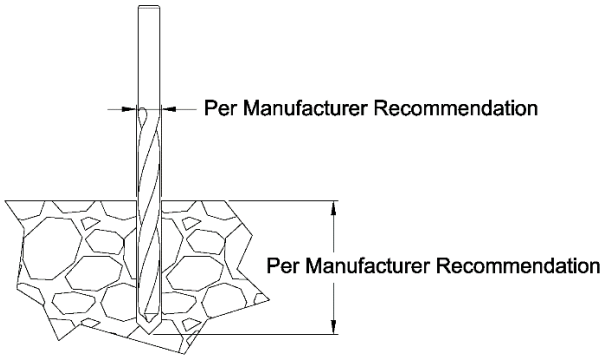
Tools and ancillary equipment

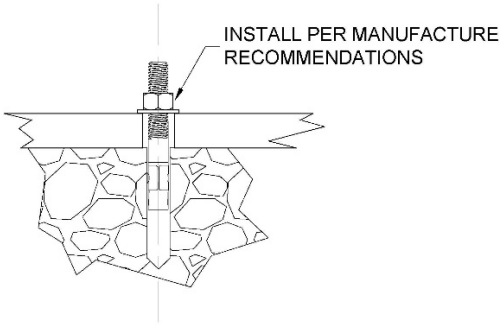
1. Philips head screw driver.
2. QTY 4, ½" x 3-3/4" concrete expansion studs.
3. ½'" torque wrench.
4. Allen wrench set for electrical connections.
5. Keys (shipped with unit), to be used to open the access panels.

Concrete pad installation requirements.
Use 4 (minimum 4) 1/2" x 3-3/4" (McMaster-Carr 91578A116 or equivalent) concrete expansion studs to anchor the steel dispenser and cabinet with the BTCP EV Charging Station.

WARNING 
BTCP EV Charging Station can only be installed onto undamaged concrete slab.
A minimum of 4 expansion bolts should be mounted on the bottom enclosure foot.
To install the expansion studs please follow the following steps:

Installation Steps





1. Drill a hole at location specified. Clean hole thoroughly
   PLEASE NOTE: Drill depth per manufacturer recommendation.

WARNING

If the drill length is less than specified, then bolt will bottom out prior to engaging the bottom installation footer on the BTCP EV charging station. The system will be able to be rocked or moved.

2. Insert the expansion bolt sleeve entirely in the hole without the fixture as shown in fig. 2 above.
3. Position the fixture to be anchored, twist the expansion bolt until it is flush with the fixture. Place enclosure.
4. Tighten the expansion bolt to the specified installation torque.

7. Operation

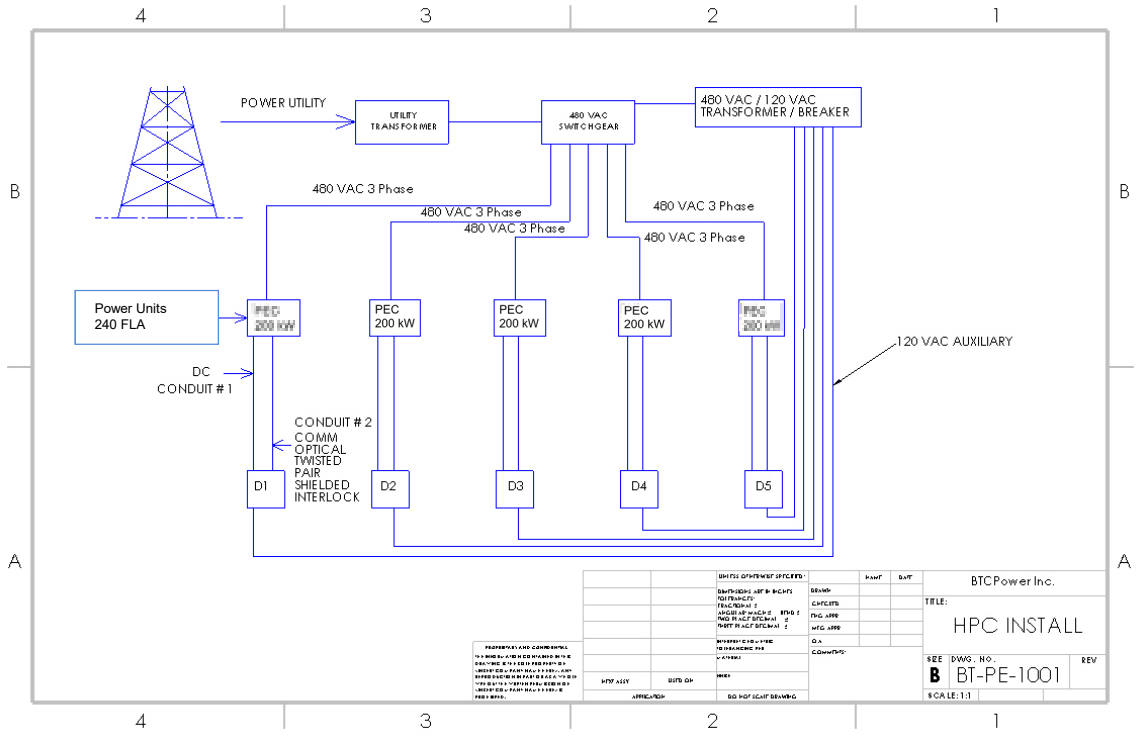
a. Error codes

Error Code	Message	Description	Change
100	No MCU Communication	This is an application fault.	As soon as system resumes, the fault is cleared.
110	Card ready not available	This is an application fault.	As soon as system resumes, the fault is cleared.
120	No internet network	This is an application fault.	As soon as system resumes, the fault is cleared.
200	Not ready from PCM	This is a hard fault that results in “out of service”	Press STOP and then START to restart the application to clear the fault
210	Safety Error	Please turn E-STOP knob to remove error. If fails to start on 2nd attempt, call to customer service no.	Please turn E-STOP knob to Enable Charger. If fails to start on 2nd attempt call to customer service no.
220	Over voltage	This is a hard fault that results in “out of service”	Press STOP and then START to restart the application to clear the fault
230	Over current	This is a hard fault that results in “out of service”	Press STOP and then START to restart the application to clear the fault
240	Over temperature	This is a hard fault that results in “out of service”	Press STOP and then START to restart the application to clear the fault
260	Charger door is open	Front or side door is not completely closed	Please close the door and try again...
270	Emergency Stop	Please turn ESTOP knob to remove error.	Please turn E-STOP knob to Enable Charger
300	Over voltage from vehicle	This error is generated by the vehicle and results in termination of the charge.	Contact Customer Service
310	Under voltage from vehicle	This error is generated by the vehicle and results in termination of the charge.	Contact Customer Service
320	Current deviation from vehicle	This error is generated by the vehicle and results in termination of the charge.	Contact Customer Service
330	High battery temperature	This error is generated by the vehicle and results in termination of the charge.	Suspend charging for a time
340	Voltage deviation error	This error is generated by the vehicle and results in termination of the charge.	Contact Customer Service
250	No CAN communication	Most likely the charge connector is improperly placed.	Reinsert the charge connector and Restart

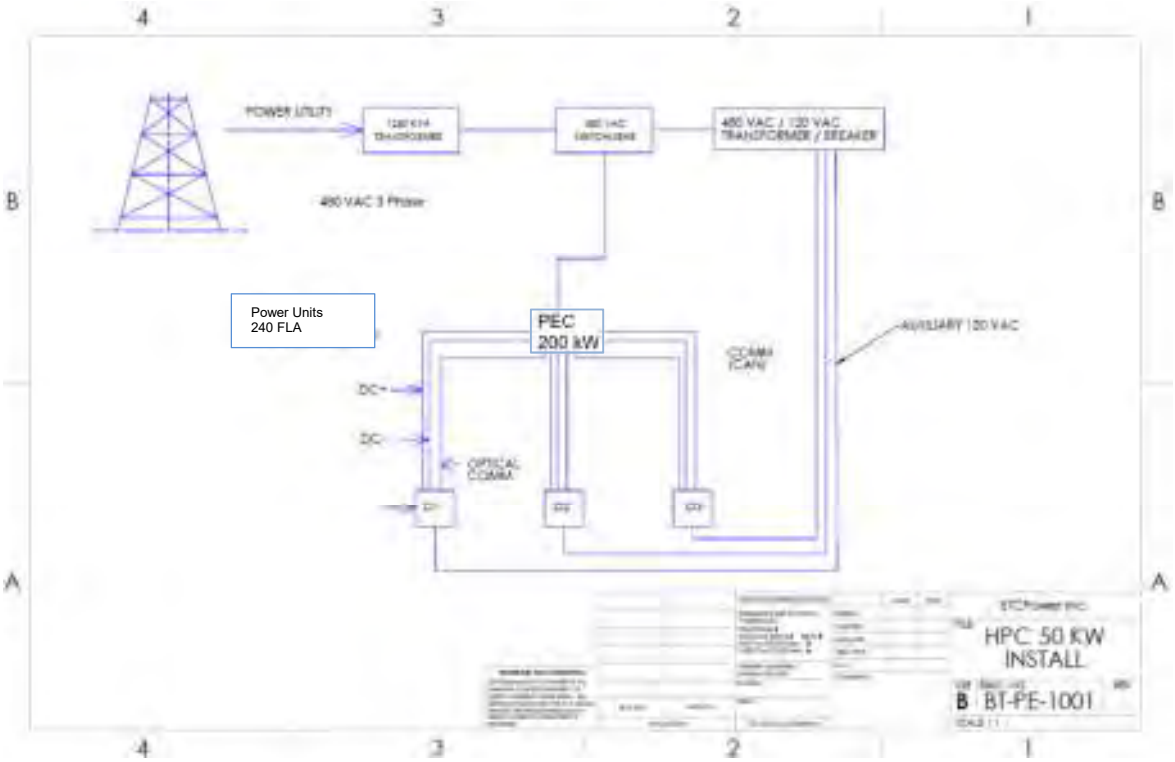
b. Communication cabling between dispenser and tower

c. Charging a vehicle

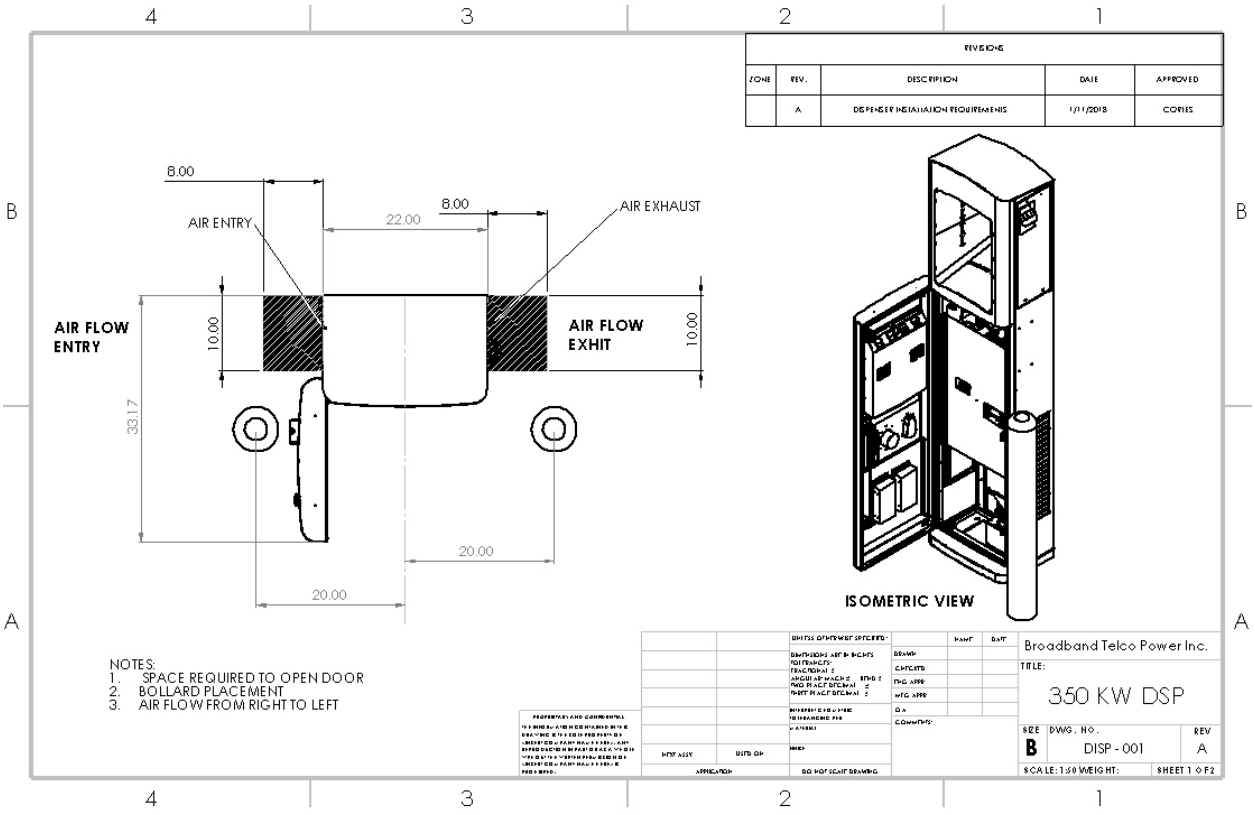
8. Installation Line Drawing 200 KW Configuration

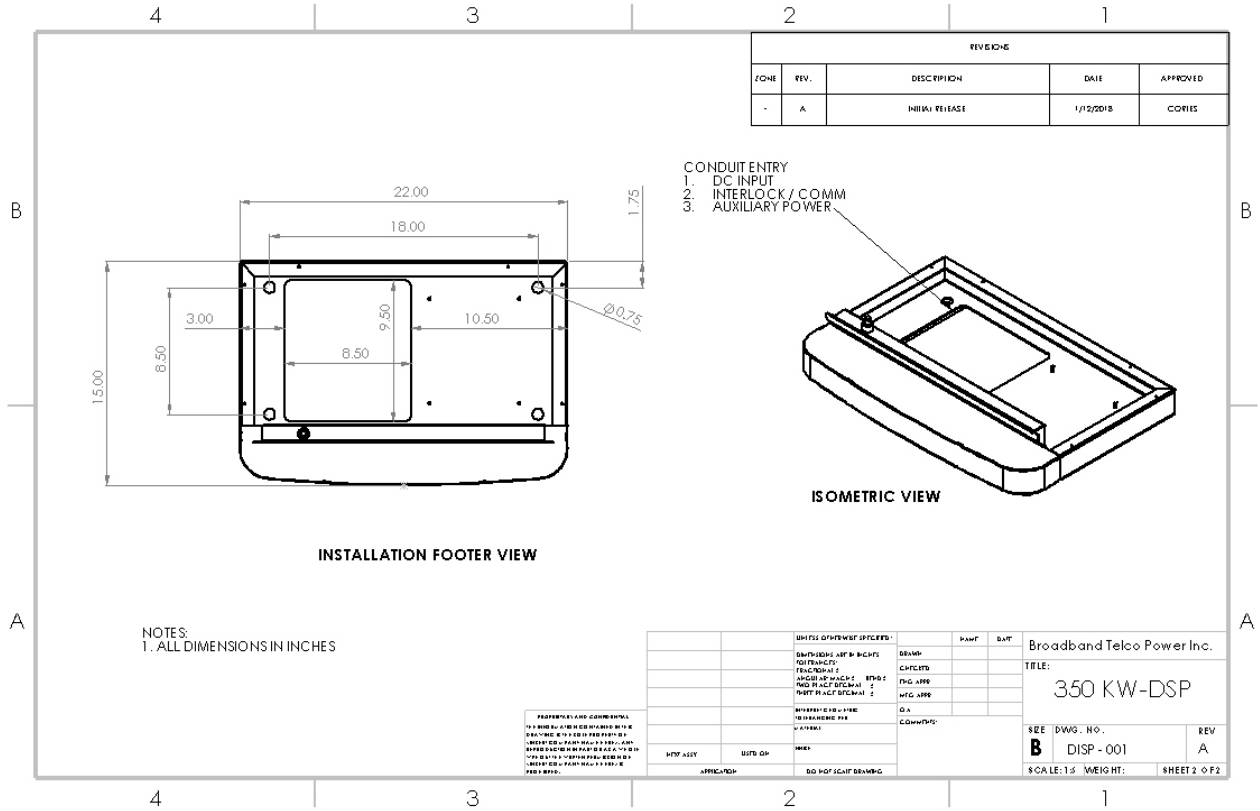


9. Installation Line Drawing 50 KW Configuration

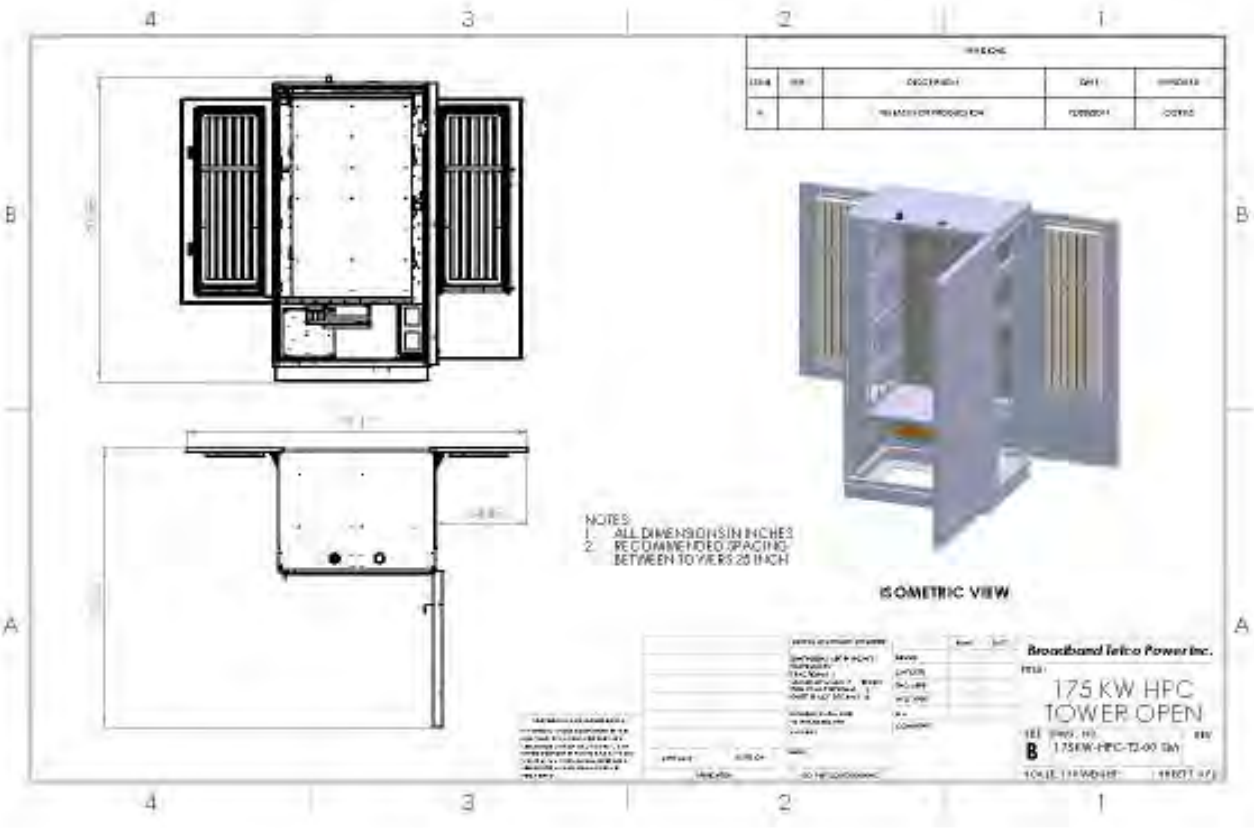


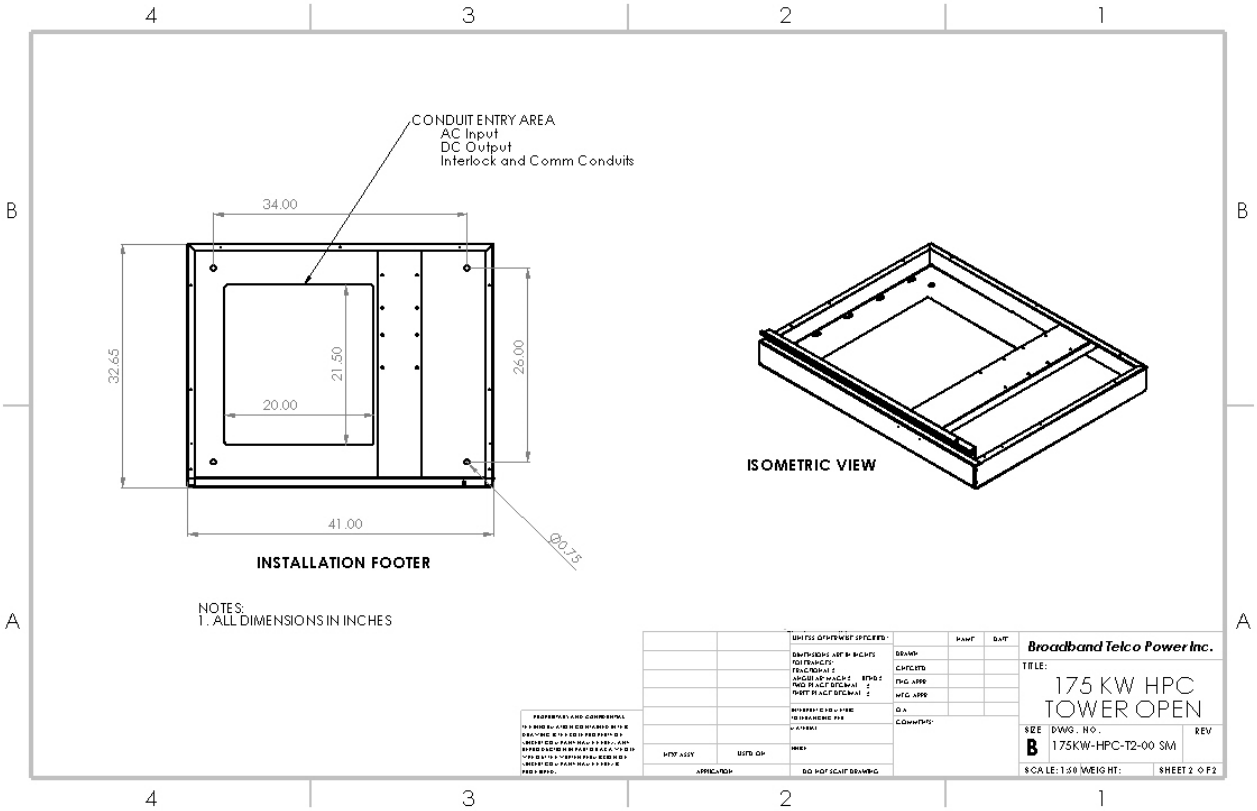
10. Dispenser Template





11. Power Conversion Tower Template





12. Maintenance

DANGER
READ AND FOLLOW THE "SAFETY CONCERNS" AT THE BEGINNING OF THIS MANUAL BEFORE USING THIS DEVICE

a. Maintenance Precautions

Each of the capacitors in this device have a high voltage for a time after shutting off the input power supply. Allow 5 minutes after powering down before servicing internal components.

b. Maintenance Items

Perform periodic checks.

c. Visual Check Items

1. Check for abnormal sound from running fans and power units. If there is abnormal sound, please contact a BTC Power representative for further assistance.
2. Check for abnormal odor, changes of inner materials, corrosion, anomaly in appearance, etc., in this device. If there are any anomalies, please contact a BTC Power representative for further assistance.
3. Check for dust and dirt in this device regularly and, if any is found, clean using appropriate procedures.

d. Replacement of Fixed-Life Components

To prevent the device from failure due to worn out components, it is necessary to replace the components before they reach the end of their lifespan. Use the following replacement intervals as a guideline for the estimate of the total running time. Please contact a BTC Power representative for further assistance when you replace the parts.

- Power feed cable: Approximately three (3) years.
- Intake and exhaust filters: Approximately three (3) years.
- Please keep in mind that the replacement interval of each part can vary depending on, for example, the usage environment of the device.

13. Warranty

LIMITED WARRANTY – ELECTRIC VEHICLE SUPPLY EQUIPMENT

BTCPower shall provide the following warranty with respect to product.

Product 2-years parts, 2-years factory labor.

Warranty shall not include any BTCs of vandalism or physical abuse of the equipment.

BTCPower, Inc. ("BTCP") warrants this electric vehicle charging product to be free from defects in material, manufacture and design for the period specified after the date of the first installation. If this product is defective in materials, manufacture or design during this warranty period, BTCPower will, at its option, repair or replace the product. Repair parts and /or replacement products may be either new or reconditioned at BTCPower' s discretion. This limited warranty does not include service to repair damage from improper installation, improper connections with peripherals, external electrical fault, accident, disaster, misuse, abuse or modifications to the product not approved in writing by BTCPower.

Any service repair outside the scope of this limited warranty shall be at applicable rates and terms then in effect. All other express and implied warranties for this product including the warranties of merchantability and fitness for a particular purpose, are hereby disclaimed. Some states do not allow the exclusion of implied warranties or limitations on how long an implied warranty lasts so the above

limitation may not apply to you. If this product is not as warranted above, your sole and exclusive remedy shall be repair or replacement as provided above. In no event will BTCPower, any of its authorized sales and service representatives, or its parent company be liable to customer or any third party for any damages in excess of the purchase price of the product. This limitation applies to damages of any kind including any direct or indirect damages, lost profits, lost saving or other special, incidental, exemplary or consequential damages whether for breach of contract, tort or otherwise or whether arising out of the use of or inability to use the product, even if BTCPower or an authorized BTCPower representative or dealer has been advised of the possibility of such damages or of any claim by any other party. Some states do not allow the exclusion or limitation of incidental damages for some products, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

FCC INFORMATION

This unit complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This unit may not cause harmful interference, and (2) this unit must accept any interference received, including interference that may cause undesired operation.

Caution Changes or modifications to this product by other than an authorized service facility could void, warranty, UL and FCC compliance.

Appendix

Input and Output

Ground Lug

Appendix – Cont.

Dispenser

Attachment #9 – List of EVs Operable with our Chargers

EV Models Currently Available in the US

Following are all of the electric vehicles (EVs) currently available in the US as of March 30, 2019. This sortable table includes both all-electric (battery electric – BEVs) and plug-in hybrids (PHEVs). You can view separate tables of each, here:

- Currently available BEVs
- Currently available PHEVs

Make / Model	PHEV or BEV	Range (miles)	MSRP	Cost / Mile of Range	Battery Pack (kWh)	Cost Per kWh	Miles Per kWh
BMW i3	BEV	153	$44,450	$291	42	$1,058	3.64
BMW 330e	PHEV	22	$43,700	$1,986	7.0	$284	3.14
BMW 530e	PHEV	30	$52,395	$1,747	9.2	$190	3.26
BMW 740e xDrive	PHEV	28	$90,095	$3,218	9.2	$350	3.04
BMW i8	PHEV	15	$143,400	$9,560	7.1	$1,346	2.11
BMW X5 xDrive 40e	PHEV	14	$63,200	$4,514	9.0	$502	1.56
Chevrolet Bolt EV	BEV	238	$36,620	$154	60	$610	3.97
Chrysler Pacifica Hybrid	PHEV	33	$41,995	$1,273	16.0	$80	2.06
Fiat 500e	BEV	87	$33,320	$383	24	$1,388	3.63
Ford Fusion Energi PHEV	PHEV	21	$33,120	$1,577	7.0	$225	3.00
Honda Clarity Electric	BEV	89	$36,620	$411	25.5	$1,436	3.49
Honda Clarity PHEV	PHEV	47	$33,400	$711	17.0	$42	2.76
Hyundai IONIQ PHEV	PHEV	29	$24,950	$860	9.0	$96	3.22
Hyundai Ioniq Electric	BEV	124	$30,315	$244	28	$1,083	4.43
Hyundai Kona Electric	BEV	258	$36,450	$141	64	$570	4.03
Hyundai Sonata PHEV	PHEV	27	$34,600	$1,281	10.0	$128	2.70
Jaguar I-PACE	BEV	234	$69,500	$297	90	$772	2.6
Kia Soul EV	BEV	111	$33,950	$306	30	$1,132	3.7

Kia Niro PHEV	PHEV	26	$27,900	$1,073	8.9	$121	2.92
Kia Optima Plug-In Hybrid	PHEV	29	$35,210	$1,214	10.0	$121	2.90
Mercedes C350e	PHEV	11	$46,050	$4,186	6.0	$698	1.83
Mercedes GLC 350e	PHEV	15	$49,990	$3,333	8.7	$383	1.72
Mercedes GLE 550e	PHEV	12	$66,300	$5,525	9.0	$614	1.33
Mercedes S550 PHEV	PHEV	20	$95,650	$4,783	13.0	$368	1.54
Mini Cooper S E Countryman All4	PHEV	12	$36,800	$3,067	8.0	$383	1.50
Mitsubishi Outlander PHEV	PHEV	22	$34,595	$1,573	13.8	$114	1.59
Nissan LEAF S	BEV	150	$29,990	$200	40	$750	3.75
Nissan LEAF S PLUS	BEV	226	$36,550	$162	62	$590	3.65
Porsche Cayenne S E-Hybrid	PHEV	14	$79,900	$5,707	11.0	$519	1.27
Porsche Panamera E-Hybrid	PHEV	16	$99,600	$6,225	11.0	$566	1.45
smart fortwo electric drive	BEV	58	$23,900	$412	17.6	$1,358	3.3
Subaru Crosstrek Hybrid (PHEV)	PHEV	17	$35,970	$2,116	8.8	$4,088	1.93
Tesla Model 3 Standard Range	BEV	220	$35,000	$159	50	$700	4.4
Tesla Model 3 Standard Range Plus	BEV	240	$37,500	$154	50	$740	4.8
Tesla Model 3 Long Range	BEV	325	$44,500	$132	78.3	$549	4.15
Tesla Model S Long Range	BEV	335	$85,000	$248	100	$830	3.35
Tesla Model S Performance	BEV	315	$99,000	$314	100	$990	3.15
Tesla Model X Long Range	BEV	295	$89,500	$298	100	$880	2.95
Tesla Model X Performance	BEV	289	$104,000	$360	100	$1,040	2.89
Toyota Prius Prime	PHEV	25	$27,100	$1,084	9.0	$120	2.78
Volvo S90 T8 PHEV	PHEV	21	$64,645	$3,078	10.4	$296	2.02
Volvo XC90 PHEV	PHEV	17	$67,800	$3,988	10.4	$383	1.63
Volvo XC60 T8 PHEV	PHEV	18	$53,895	$2,994	10.4	$288	1.73
VW e-Golf	BEV	125	$31,895	$255	35.8	$891	3.49

Attachment #10 – OpConnect Web Portal

OpConnect's charger management platform gives you access to a web portal dashboard that allows:

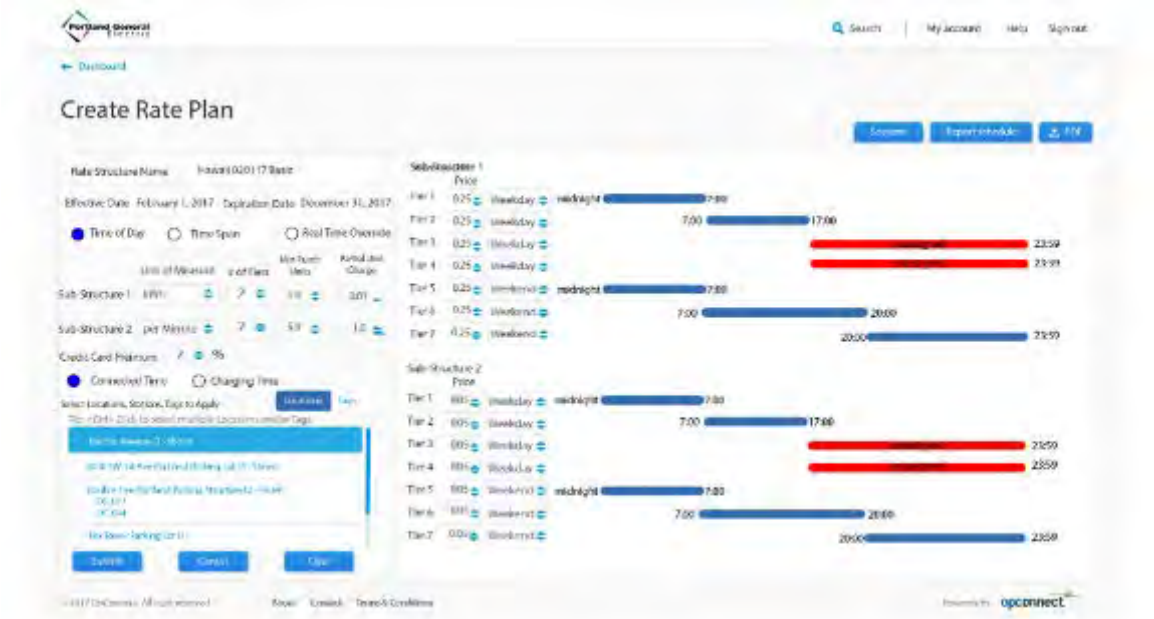
- viewing of charging station status
- the ability to set usage fees, including fees that differ based on the type of user (i.e. free for employees & guests pay to use)
- viewing of usage reports for quick submittal to grant agencies
- scheduling of the automatic email delivery of revenue and usage reports so that you don't have to log into the web portal and download them
- viewing of any open maintenance or support tickets against chargers.

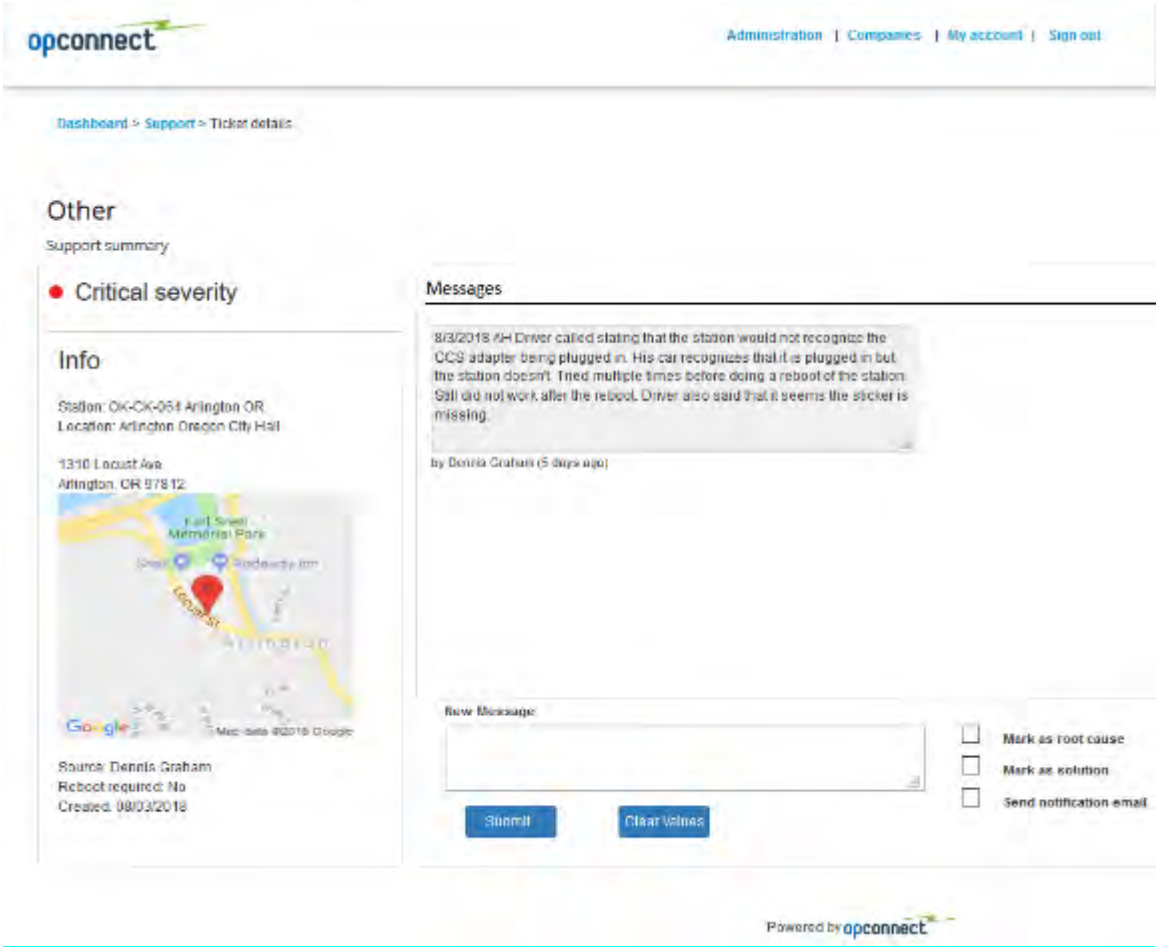
Here are Just Some of our Customers and Partners

The following table includes specifications of the platform:

Supported Systems
OCPP Compliant Chargers

Level 1, Level 2, DC Fast Chargers
Connect to charger via cellular, wi-fi or hard wire
Smartphone (iOS and Android devices) application for drivers
Integration with utility customer management systems
Station owners allowed to have chargers from multiple manufacturers at single location and manage all with one platform
E-mail and text notifications to drivers when charging complete
Round-robin reservation system with notifications to next driver in the queue to facilitate turnover throughout the day
Station Owner Dashboard
View real-time charging station status
View and download usage and revenue reports
Schedule automatic e-mail delivery of usage and revenue reports
View open maintenance and support tickets for your chargers
Flexible Access Control
Restrict access to authorized users only (e.g. employees only)
Charge different usage rates for different users (e.g. employees charge for free)
Station owner can set own rates and update any time with web portal
Time-of-day rates with weekday vs weekend rates
Time span rates (e.g. costs increase after a certain time period to increase station turnover)
Support for credit cards, OpConnect card, Smartphone app
Remotely start or stop a charging session or disable a charger
Maintenance/Repair Ticket System
Automatic email notifications to maintenance/repair personnel
Track status of maintenance or repair operations
Portal Administration Functions
Multiple access levels (Company Admin, User, Maintenance, etc.)
Data views and ability to control chargers (set rate plans, restrict usage, etc.) controlled by access level


Create Rate Plan
Dashboard
Time of Day
Time Span
Real Time Override
Sub-Structure 1
Sub-Structure 2
Credit Card Premium
Connected Time
Charging Time
midnight
7:00
17:00
23:59
opconnect


opconnect
Administration | Companies | My account | Sign out
Dashboard > Support > Ticket details
Other
Support summary
Critical severity
Info
Station: OK-CK-051 Arlington OR
Location: Arlington Oregon City Hall
1310 Locust Ave
Arlington, OR 97812
Source: Dennis Graham
Reboot required: No
Created: 08/03/2018
Messages
8/3/2018 AH Driver called stating that the station would not recognize the CCS adapter being plugged in. His car recognizes that it is plugged in but the station doesn't. Tried multiple times before doing a reboot of the station. Still did not work after the reboot. Driver also said that it seems the sticker is missing.
by Dennis Graham (5 days ago)
New Message
Mark as root cause
Mark as solution
Send notification email
Submit
Clear Values
Powered by opconnect

Attachment #11 – PCI Compliance

Statement Regarding USA Technologies Data Security

The USA Technologies ePort, Seed Cashless and ePort Connect Service are designed to facilitate cashless payments (i.e. credit or debit card) primarily for the unattended, small-ticket point of sale industries, such as vending operations. The ePort and Seed Cashless will communicate wirelessly through the cellular network. All data transmission into and out of the ePort and Seed Cashless is strongly encrypted. The encryption keys are periodically changed to ensure adherence to the highest industry standards for secure communication. These devices only support communication that they initiate. Hence, there is no possibility of logging into either device or otherwise establishing direct communication with it. Only responses from the USA Technologies network are accepted by the ePort or Seed Cashless after the device first establishes an initial communication session with the USA Technologies network.

The ePort and Seed Cashless only read the card Track 2 data and retain that data in volatile memory only long enough to perform a card authorization. The track data is released from memory once the authorization response is received and is NEVER stored in the device for any reason. The primary account number (PAN) and expiration date are the only two pieces of data captured from the card by USA Technologies. No other data, such as the card holder's name, is captured. All data processing and storage occurs in the USA Technologies PCI compliant network. The ePort G-9 has been audited and determined to be out of scope for a PA-DSS v3.1 listing. This device and Seed Cashless fall under our PCI-DSS Service Provider PCI-DSS v3.2 certification as a secure network end-point. A security White Paper on the ePort G-9 is available upon request for more detail.

USA Technologies also offers a software interface to our systems using either the ePort SDK or ePort Quick Connect API. The use of these products requires that a compatible secure encrypted reader be used in order to ensure credit card data security is maintained end-to end. As the Third Party Payment Processor, USA Technologies assumes the risk for any credit card data breach from these systems. The USA Technologies business model was developed to ensure that our customers are effectively out in scope for PCI-DSS. If there were ever a data breach, USA Technologies would be responsible for managing all communication with our customers, card processors and the authorities.

In summary, no credit card data is ever stored in an ePort or Seed Cashless device and all communication is strongly encrypted. All communication is initiated by these devices and only to the USA Technologies network. USA Technologies maintains compliance as a PCI-DSS v3.2 Level 1 Service Provider and is currently listed on the VISA website at: http://www.visa.com/cisp . Annual PCI audits are performed to maintain this compliance level and to ensure the continued secure processing of credit card data.

USA Technologies, Inc. is responsible for the security of the card holder data. As such, we continually maintain all applicable PCI-DSS standards associated with our credit card processing environment.

Arthur M. Royce

Arthur M. Royce
Sr. Director of Security and Compliance

8/1/2018
Date

VISA
CISP Compliant

Payment Card Industry (PCI)
Data Security Standard

Attestation of Compliance for Onsite Assessments – Service Providers

Version 3.2

April 2016

Section 1: Assessment Information

Instructions for Submission

This Attestation of Compliance must be completed as a declaration of the results of the service provider's assessment with the *Payment Card Industry Data Security Standard Requirements and Security Assessment Procedures (PCI DSS).* Complete all sections: The service provider is responsible for ensuring that each section is completed by the relevant parties, as applicable. Contact the requesting payment brand for reporting and submission procedures.

Part 1. Service Provider and Qualified Security Assessor Information

Part 1a. Service Provider Organization Information

Company Name:	USA Technologies, Inc		DBA (doing business as):	N/A	
Contact Name:	Arthur Royce		Title:	Sr. Director of Security and Compliance	
Telephone:	+1.610.989.0340		E-mail:	aroyce@usatech.com	
Business Address:	100 Deerfield Lane, Suite 300		City:	Malvern	
State/Province:	PA	Country:	USA	Zip:	19355
URL:	https://www.usatech.com				

Part 1b. Qualified Security Assessor Company Information (if applicable)

Company Name:	Truvantis, Inc.				
Lead QSA Contact Name:	Dick Hacking		Title:	Sr Consultant	
Telephone:	+1.415.422.9826		E-mail:	dick.hacking@truvantis.com	
Business Address:	548 Market Street		City:	San Francisco	
State/Province:	CA	Country:	USA	Zip:	94104
URL:	https://www.truvantis.com				

Part 2. Executive Summary

Part 2a. Scope Verification

Services that were INCLUDED in the scope of the PCI DSS Assessment (check all that apply):

Name of service(s) assessed:	USALive, USAMore, USASuds.	
Type of service(s) assessed:		
Hosting Provider: ☐ Applications / software ☐ Hardware ☐ Infrastructure / Network ☐ Physical space (co-location) ☐ Storage ☐ Web ☐ Security services ☐ 3-D Secure Hosting Provider ☐ Shared Hosting Provider ☐ Other Hosting (specify):	**Managed Services (specify):** ☐ Systems security services ☐ IT support ☐ Physical security ☐ Terminal Management System ☐ Other services (specify):	**Payment Processing:** ☒ POS / card present ☒ Internet / e-commerce ☒ MOTO / Call Center ☐ ATM ☐ Other processing (specify):
☐ Account Management	☐ Fraud and Chargeback	☐ Payment Gateway/Switch
☐ Back-Office Services	☐ Issuer Processing	☐ Prepaid Services
☐ Billing Management	☐ Loyalty Programs	☐ Records Management
☐ Clearing and Settlement	☐ Merchant Services	☐ Tax/Government Payments
☐ Network Provider		
☒ Others (specify): Application development, transmission of CHD from vending machines to data center.		

***Note**: These categories are provided for assistance only, and are not intended to limit or predetermine an entity's service description. If you feel these categories don't apply to your service, complete "Others." If you're unsure whether a category could apply to your service, consult with the applicable payment brand.*

Part 2a. Scope Verification *(continued)*

Services that are provided by the service provider but were NOT INCLUDED in the scope of the PCI DSS Assessment (check all that apply):

Name of service(s) not assessed:	Cantaloupe Systems Inc

Type of service(s) not assessed:

Hosting Provider:	**Managed Services (specify):**	**Payment Processing:**
☐ Applications / software	☐ Systems security services	☒ POS / card present
☐ Hardware	☐ IT support	☐ Internet / e-commerce
☐ Infrastructure / Network	☐ Physical security	☐ MOTO / Call Center
☐ Physical space (co-location)	☐ Terminal Management System	☐ ATM
☐ Storage	☐ Other services (specify):	☐ Other processing (specify):
☐ Web		
☐ Security services		
☐ 3-D Secure Hosting Provider		
☐ Shared Hosting Provider		
☐ Other Hosting (specify):		
☐ Account Management	☐ Fraud and Chargeback	☐ Payment Gateway/Switch
☐ Back-Office Services	☐ Issuer Processing	☐ Prepaid Services
☐ Billing Management	☐ Loyalty Programs	☐ Records Management
☐ Clearing and Settlement	☐ Merchant Services	☐ Tax/Government Payments
☐ Network Provider		
☐ Others (specify):		

Provide a brief explanation why any checked services were not included in the assessment:	Cantaloupe Systems became a wholly owned subsidiary in 2017 and have a separate PCI DSS assessment and AOC.

Part 2b. Description of Payment Card Business

Describe how and in what capacity your business stores, processes, and/or transmits cardholder data.	Entity receives the cardholder data either from a vending machine or a kiosk via an encrypted channel across a public network. Entity then stores it encrypted on their servers and passes it on to a payment processor for authorization and settlement. The PAN is stored truncated and encrypted along with expiry and amount charged. The cardholder's name is not received or stored. When the Track 2 data passes through Entity's network it is NEVER persisted in any way. It actually resides in volatile RAM only while it makes its way to the payment processor, Chase Paymentech. If a server were to go down, any CHD being processed would be lost. There is no recovery for this data. Entity's key manager stores the PAN and Expiry and sometimes the Zip code associated with the account. The PAN and Expiry are needed to process refunds only. The PAN, Expiry and Zip Code are used when CHD is tokenized for eCommerce (non-card present) transactions. Entity also has a website which has a page to enter PAN, expiry and CVV. This is sent directly to the payment processor for authorization without being stored. After Authorization is received, the CVV is discarded, the first six and last four digits are saved into the transaction database along with the authorization code. The rest of the information is securely de-referenced from the active memory. Customer service representatives (CSR) may receive cardholder data over the phone to process refunds and chargebacks. The CSRs only receive and input the first six and last four digits of a credit card and do not see more than that when querying a transaction. There is a team of sales staff who can receive complete credit card information as part of DocuSign documents from new clients. This team inputs the whole PAN and other data into ePort Online, which is a web front-end for the processing of CHD. There is no database accepting this data directly. It follows the same processing path the data received from vending machines or kiosks such that it exists in RAM only while en-route to Chase Paymentech. Persisted data is only found in the Key Manager and may contain only the PAN, Expiry and possibly Zip Code. Nothing else. The DocuSign documents are not stored. They are retained by DocuSign and fall under DocuSign's AOC for the secure handling of the data.
Describe how and in what capacity your business is otherwise involved in or has the ability to impact the security of cardholder data.	N/A

Part 2c. Locations

List types of facilities (for example, retail outlets, corporate offices, data centers, call centers, etc.) and a summary of locations included in the PCI DSS review.

Type of facility:	Number of facilities of this type	Location(s) of facility (city, country):
Example: Retail outlets	*3*	*Boston, MA, USA*

Headquarters office	1	Malvern, PA, USA
Data Center	1	Trooper, PA, USA

Part 2d. Payment Applications

Does the organization use one or more Payment Applications? ☐ Yes ☒ No

Provide the following information regarding the Payment Applications your organization uses:

Payment Application Name	Version Number	Application Vendor	Is application PA-DSS Listed?	PA-DSS Listing Expiry date (if applicable)
N/A			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	

Part 2e. Description of Environment

Provide a ***high-level*** description of the environment covered by this assessment. *For example:* • *Connections into and out of the cardholder data environment (CDE).* • *Critical system components within the CDE, such as POS devices, databases, web servers, etc., and any other necessary payment components, as applicable.*	Headquarters and data center physical security. Policies and procedures related to CHD processing, application program and communications system development between card readers and the data center. Connections into and out of the CDE, persons, technologies and processes involved in with CHD.
Does your business use network segmentation to affect the scope of your PCI DSS environment? *(Refer to "Network Segmentation" section of PCI DSS for guidance on network segmentation)*	☒ Yes ☐ No

Part 2f. Third-Party Service Providers	
Does your company have a relationship with a Qualified Integrator & Reseller (QIR) for the purpose of the services being validated? If Yes: Name of QIR Company: QIR Individual Name: Description of services provided by QIR:	☐ Yes ☒ No
Does your company have a relationship with one or more third-party service providers (for example, Qualified Integrator Resellers (QIR), gateways, payment processors, payment service providers (PSP), web-hosting companies, airline booking agents, loyalty program agents, etc.) for the purpose of the services being validated?	☒ Yes ☐ No

If Yes:

Name of service provider:	**Description of services provided:**
Chase Paymentech	Card processing
Tier Point	Data Center
TrustWave	ASV Vulnerability testing

Note: *Requirement 12.8 applies to all entities in this list.*

Part 2g. Summary of Requirements Tested

For each PCI DSS Requirement, select one of the following:

- **Full** – The requirement and all sub-requirements of that requirement were assessed, and no sub-requirements were marked as "Not Tested" or "Not Applicable" in the ROC.
- **Partial** – One or more sub-requirements of that requirement were marked as "Not Tested" or "Not Applicable" in the ROC.
- **None** – All sub-requirements of that requirement were marked as "Not Tested" and/or "Not Applicable" in the ROC.

For all requirements identified as either "Partial" or "None," provide details in the "Justification for Approach" column, including:

- Details of specific sub-requirements that were marked as either "Not Tested" and/or "Not Applicable" in the ROC
- Reason why sub-requirement(s) were not tested or not applicable

Note: *One table to be completed for each service covered by this AOC. Additional copies of this section are available on the PCI SSC website.*

Name of Service Assessed:	USALive, USAMore, USASuds.			
	Details of Requirements Assessed			
PCI DSS Requirement	**Full**	**Partial**	**None**	**Justification for Approach** (Required for all "Partial" and "None" responses. Identify which sub-requirements were not tested and the reason.)
Requirement 1:	☐	☒	☐	**1.2.3 N/A No Wireless networks carry CHD.**
Requirement 2:	☐	☒	☐	**2.6 N/A Entity is not a shared hosting provider.**
Requirement 3:	☐	☒	☐	**3.4.1 N/A Disk encryption is not used.** **3.5.2 N/A Cryptographic keys are wholly managed within an HSM, no person ever has access to them.** **3.6.2 N/A Cryptographic keys are never distributed.** **3.6.6 N/A Manual clear-text cryptographic key operations are not performed.**
Requirement 4:	☒	☐	☐	
Requirement 5:	☐	☒	☐	**5.1.2 N/A All systems are considered vulnerable to malicious attacks.**
Requirement 6:	☐	☒	☐	**6.4.4 N/A Systems are never moved from test to production.**
Requirement 7:	☒	☐	☐	
Requirement 8:	☐	☒	☐	**8.5.1 N/A Entity does not have access to customer premises.**
Requirement 9:	☐	☒	☐	**9.9, 9.9.2, 9.9.3 N/A Entity does not manage the devices which capture payment card data.**
Requirement 10:	☒	☐	☐	

Requirement 11:	☒	☐	☐	
Requirement 12:	☒	☐	☐	
Appendix A1:	☐	☒	☐	**A1.1, A1.2, A1.3, A1.4 N/A Entity is not a shared hosting provider.**
Appendix A2:	☒	☐	☐	

Section 2: Report on Compliance

This Attestation of Compliance reflects the results of an onsite assessment, which is documented in an accompanying Report on Compliance (ROC).

The assessment documented in this attestation and in the ROC was completed on:	*4/3/2018*	
Have compensating controls been used to meet any requirement in the ROC?	☐ Yes	☒ No
Were any requirements in the ROC identified as being not applicable (N/A)?	☒ Yes	☐ No
Were any requirements not tested?	☐ Yes	☒ No
Were any requirements in the ROC unable to be met due to a legal constraint?	☐ Yes	☒ No

Section 3: Validation and Attestation Details

Part 3. PCI DSS Validation

This AOC is based on results noted in the ROC dated *April 3, 2018.*

Based on the results documented in the ROC noted above, the signatories identified in Parts 3b-3d, as applicable, assert(s) the following compliance status for the entity identified in Part 2 of this document (***check one):***

☒	**Compliant:** All sections of the PCI DSS ROC are complete, all questions answered affirmatively, resulting in an overall **COMPLIANT** rating; thereby *USA Technologies, Inc* has demonstrated full compliance with the PCI DSS.
☐	**Non-Compliant:** Not all sections of the PCI DSS ROC are complete, or not all questions are answered affirmatively, resulting in an overall **NON-COMPLIANT** rating, thereby *(Service Provider Company Name)* has not demonstrated full compliance with the PCI DSS. **Target Date** for Compliance: An entity submitting this form with a status of Non-Compliant may be required to complete the Action Plan in Part 4 of this document. *Check with the payment brand(s) before completing Part 4.*
☐	**Compliant but with Legal exception:** One or more requirements are marked "Not in Place" due to a legal restriction that prevents the requirement from being met. This option requires additional review from acquirer or payment brand. *If checked, complete the following:*

Affected Requirement	Details of how legal constraint prevents requirement being met

Part 3a. Acknowledgement of Status

Signatory(s) confirms:

(Check all that apply)

☒	The ROC was completed according to the *PCI DSS Requirements and Security Assessment Procedures*, Version *3.2*, and was completed according to the instructions therein.
☒	All information within the above-referenced ROC and in this attestation fairly represents the results of my assessment in all material respects.
☐	I have confirmed with my payment application vendor that my payment system does not store sensitive authentication data after authorization.
☒	I have read the PCI DSS and I recognize that I must maintain PCI DSS compliance, as applicable to my environment, at all times.
☒	If my environment changes, I recognize I must reassess my environment and implement any additional PCI DSS requirements that apply.

Part 3a. Acknowledgement of Status (continued)

☒	No evidence of full track data[1], CAV2, CVC2, CID, or CVV2 data[2], or PIN data[3] storage after transaction authorization was found on ANY system reviewed during this assessment.
☒	ASV scans are being completed by the PCI SSC Approved Scanning Vendor *TrustWave*

Part 3b. Service Provider Attestation

Signature of Service Provider Executive Officer ↑	*Date:* 4/4/2018
Service Provider Executive Officer Name: Michael Lawlor	*Title:* CHIEF Services Officer

Part 3c. Qualified Security Assessor (QSA) Acknowledgement (if applicable)

If a QSA was involved or assisted with this assessment, describe the role performed:	*Evaluation of scope, performance of assessment in accordance with PCI DSS 3.2. Interviews with staff and service providers, evidence gathering and assessment, physical security assessment, policy and procedure evaluation.*

Signature of Duly Authorized Officer of QSA Company ↑	*Date: April 3, 2018*
Duly Authorized Officer Name: Andy Cottrell	*QSA Company:* Truvantis, Inc

Part 3d. Internal Security Assessor (ISA) Involvement (if applicable)

If an ISA(s) was involved or assisted with this assessment, identify the ISA personnel and describe the role performed:	*N/A*

[1] Data encoded in the magnetic stripe or equivalent data on a chip used for authorization during a card-present transaction. Entities may not retain full track data after transaction authorization. The only elements of track data that may be retained are primary account number (PAN), expiration date, and cardholder name.

[2] The three- or four-digit value printed by the signature panel or on the face of a payment card used to verify card-not-present transactions.

[3] Personal identification number entered by cardholder during a card-present transaction, and/or encrypted PIN block present within the transaction message.

Part 4. Action Plan for Non-Compliant Requirements

Select the appropriate response for "Compliant to PCI DSS Requirements" for each requirement. If you answer "No" to any of the requirements, you may be required to provide the date your Company expects to be compliant with the requirement and a brief description of the actions being taken to meet the requirement.

Check with the applicable payment brand(s) before completing Part 4.

PCI DSS Requirement	Description of Requirement	Compliant to PCI DSS Requirements (Select One)		Remediation Date and Actions (If "NO" selected for any Requirement)
		YES	NO	
1	Install and maintain a firewall configuration to protect cardholder data	☐	☐	
2	Do not use vendor-supplied defaults for system passwords and other security parameters	☐	☐	
3	Protect stored cardholder data	☐	☐	
4	Encrypt transmission of cardholder data across open, public networks	☐	☐	
5	Protect all systems against malware and regularly update anti-virus software or programs	☐	☐	
6	Develop and maintain secure systems and applications	☐	☐	
7	Restrict access to cardholder data by business need to know	☐	☐	
8	Identify and authenticate access to system components	☐	☐	
9	Restrict physical access to cardholder data	☐	☐	
10	Track and monitor all access to network resources and cardholder data	☐	☐	
11	Regularly test security systems and processes	☐	☐	
12	Maintain a policy that addresses information security for all personnel	☐	☐	
Appendix A1	Additional PCI DSS Requirements for Shared Hosting Providers	☐	☐	
Appendix A2	Additional PCI DSS Requirements for Entities using SSL/early TLS	☐	☐	

Attachment #12 Example Reports

opconnect

www.opconnect.com

CONSUMPTION REPORT

Description Demo Site provided by MyUtility
SiteID 1000403
Owner MyUtility
Address 44 My Street
MyCity HI 96740

User ID	Station ID	Session ID	Interval ID	Description	Start Date	Start Time	End Date	Stop Charge Time	End Connect Time	Connect Time	Charge Time	Total Energy	Peak Energy	% Energy Offpeak	Renewable Energy	Port	Cost	Penalty Assessed	Authorization Fee	Processing Fee	Gateway	Token Type	Unit Cost	GHG Savings (kg)
	OC-CK-DEMO	208078		Demo Charger	9/29/2018	9:17	9/29/2018	9:28	9:28	11	11	7.65	48.8	0%	0.65	1	3.75	0	0.45	0.23	USATech	Payment Card	0.49	5.2
			208078-001		9/29/2018	9:17	9/29/2018	9:28				7.65	48.8											
10345	OC-CK-DEMO	208088		Demo Charger	9/29/2018	12:32	9/29/2018	13:11	13:11	39	39	21.05	48.9	0%	0.15	2	10.31	0	0.4	0.52	OpConnect	Mobile	0.49	14.2
			208088-001		9/29/2018	12:32	9/29/2018	12:47				10.25	48.9											
			208088-002		9/29/2018	12:47	9/29/2018	13:02				9.23	38.8											
			208088-003		9/29/2018	13:02	9/29/2018	13:11				1.57	10											
	OC-CK-DEMO	208110		Demo Charger	9/29/2018	15:48	9/29/2018	16:09	16:09	21	21	10.59	48.9	0%	0.50	1	5.19	0	0.45	0.31	USATech	Payment Card	0.49	7.1
			208110-001		9/29/2018	15:48	9/29/2018	16:03				9.43	48.9											
			208110-002		9/29/2018	16:03	9/29/2018	16:09				1.16	41											
	OC-CK-DEMO	208129		Demo Charger	9/30/2018	7:43	9/30/2018	8:15	8:15	32	32	17.22	48.8	0%	0.00	1	9.3	0	0.45	0.56	USATech	Payment Card	0.54	11.6
			208129-001		7:43	9/30/2018	7:58					9.9	48.8											
			208129-002		7:58	9/30/2018	8:13					6.31	39.9											
			208129-003		8:13	9/30/2018	8:15					1.1	14											
	OC-CK-DEMO	208141		Demo Charger	9/30/2018	9:35	9/30/2018	9:51	9:50	16	16	11.69	48.8	0%	0.00	1	5.73	0	0.45	0.34	USATech	Payment Card	0.49	7.9
			208141-001		9:35	9/30/2018	9:50					9.37	48.8											
			208141-002		9:35	9/30/2018	9:51					2.32	37.7											
	OC-CK-DEMO	208156		Demo Charger	9/30/2018	11:26	9/30/2018	11:57	11:57	31	31	7.44	31.1	0%	0.00	1	3.65	0	0.45	0.22	USATech	Payment Card	0.49	5.0
			208156-001		11:26	9/30/2018	11:41					6.34	31.1											
			208156-002		11:41	9/30/2018	11:56					1	8.3											
			208156-003		11:56	9/30/2018	11:57					0.1	5.2											
	OC-CK-DEMO	208165		Demo Charger	9/30/2018	12:18	9/30/2018	12:31	12:31	13	13	7.84	48.8	0%	0.00	1	3.84	0	0.45	0.23	USATech	Payment Card	0.49	5.3
			208165-001		12:18	9/30/2018	12:31					7.84	48.8											
	OC-CK-DEMO	208183		Demo Charger	9/30/2018	16:18	9/30/2018	16:43	16:43	24	24	11.21	48.5	0%	0.00	1	5.49	0	0.45	0.33	USATech	Payment Card	0.49	7.6
			208183-001		16:18	9/30/2018	16:33					9.56	48.5											
			208183-002		16:33	9/30/2018	16:43					1.65	34.4											
	OC-CK-DEMO	208184		Demo Charger	9/30/2018	16:44	9/30/2018	16:55	16:55	12	12	7.19	48.8	0%	0.00	1	3.52	0	0.45	0.21	USATech	Payment Card	0.49	4.9
			208184-001		16:44	9/30/2018	16:55					7.19	48.8											
11478	OC-CK-DEMO	208273		Demo Charger	10/1/2018	22:11	10/1/2018	22:30	22:30	19	19	12.12	48.9	0%	0.00	1	6.54	0	0.4	0.33	OpConnect	Mobile	0.54	8.2
			208273-001		22:11	10/1/2018	22:26					10.1	48.9											
			208273-002		22:26	10/1/2018	22:30					2.11	32.8											
77534	OC-CK-DEMO	208291		Demo Charger	10/2/2018	9:02	10/2/2018	10:23	10:23	81	81	26.56	48.9	0%	0.00	1	13.01	0	0.4	0.65	OpConnect	Mobile	0.49	17.9
			208291-001		9:02	10/2/2018	9:17					10.3	48.9											
			208291-002		9:17	10/2/2018	9:32					8.4	34.4											
			208291-003		9:32	10/2/2018	9:47					4.76	12.4											
			208291-004		9:47	10/2/2018	10:02					1.99	10.1											
			208291-005		10:02	10/2/2018	10:17					1	8.1											
			208291-006		10:17	10/2/2018	10:23					0.11	5											
	OC-CK-DEMO	208305		Demo Charger	10/2/2018	12:19	10/2/2018	12:41	12:41	22	22	10.74	48.8	0%	0.00	1	5.26	0	0.45	0.32	USATech	Payment Card	0.49	7.2
			208305-001		12:19	10/2/2018	12:34					9.2	48.8											
			208305-002		12:34	10/2/2018	12:41					1.54	32.9											
4655	OC-CK-DEMO	208324		Demo Charger	10/2/2018	15:31	10/2/2018	15:59	15:59	28	28	5.03	36.2	0%	0.00	1	2.46	0	0.4	0.12	OpConnect	Mobile	0.49	3.4
			208324-001		15:31	10/2/2018	15:46					4	36.2											
			208324-002		15:46	10/2/2018	15:59					1.03	7.9											
9132	OC-CK-DEMO	208387		Demo Charger	10/3/2018	12:59	10/3/2018	13:24	13:24	26	26	11.13	48.8	0%	0.00	1	5.45	0	0.4	0.27	OpConnect	Mobile	0.49	7.5
			208387-001		12:59	10/3/2018	13:14					9.4	48.8											
			208387-002		13:14	10/3/2018	13:24					1.73	38.9											
	OC-CK-DEMO	208420		Demo Charger	10/4/2018	7:56	10/4/2018	8:21	8:21	24	24	10.94	48.7	0%	0.00	1	5.91	0	0.45	0.35	USATech	Payment Card	0.54	7.4
			208420-001		7:56	10/4/2018	8:11					9.3	48.7											
			208420-002		8:11	10/4/2018	8:21					1.64	39.2											
TOTALS:										682	0	309.08	kWh				$157.98		$11.45	$9.10				120.4
																	$20.55		Total Fees					
												0.217283	Tons of Co2 Saved				$137.43		Net Usage Fees to Owner					

OpConnect

Iowa Department of Administrative Services
Service • Efficiency • Value

Governor Kim Reynolds
Lt. Governor Adam Gregg
Jim Kurtenbach, Director

August 8, 2019

To: All Potential Respondents
From: Nancy Wheelock, Purchasing Agent
Subject: RFP1119005053 – Electric Vehicle Charging Stations

Addendum Three

Please amend the subject RFP to include the following:

The State is amending the due date for Proposals from August 13, 2019 to August 28, 2019. All proposals for this RFP are now due on August 28, 2019 no later than 3:00 p.m. central time. This is the final extension for this RFP.

Due to the extended due date for the RFP, the State will allow an additional question and answer period for this RFP. Respondents must submit any additional RFP written questions, requests for clarification, and suggested changes on or before August 16, 2019. Final questions are due by August 16, 2019 no later than 3:00 p.m. central time.

Please acknowledge receipt of this addendum by signing in the space provided below, and <u>return this letter with your offer (do not send back separately).</u>

I hereby acknowledge receipt of this addendum.

Signature

26 August 2019
Date

Dexter Turner
Typed or Printed Name

August 16, 2019

To: All Potential Respondents
From: Nancy Wheelock, Purchasing Agent
Subject: RFP1119005053 – Electric Vehicle Charging Stations

Addendum Four

Please amend the subject RFP to include the following answers to timely submitted questions:

Q1. **3.3.1.1 Credit card or ePayables**
The State of Iowa's Purchasing Cards (Pcards) and ePayable solution (EAP) are commercial payment methods utilizing the VISA credit card network. The State of Iowa will not accept price changes or pay additional fees if Respondent uses the Pcard or EAP payment methods. Pcard-accepting Respondents must abide by the State of Iowa's Terms of Pcard Acceptance, as provided in Section 7.7 of the RFP. Respondents must provide a statement regarding their ability to meet the requirements I this subsection, as well as identifying their transaction reporting capabilities (Level I, II, or III).

The RFP table of Contents lists Section 7 "Contractual Terms and Conditions" with seven (7) subsections. The seventh subsection is "7.7 Administrative Fee", however in the RFP document, page 26 shows Section 7 titled as "Contract Terms and Conditions" (not Contractual Terms and Conditions). In this section which continues to pages 27 and 28 also has two subsections numbered the same. Subsections titled "Special Terms" and "Contract Length" are both numbers as 7.2. So, the reference in the requirement above referring to "Section 7.7" is actually 7.6 (due to the duplicate number 7.2). In addition to this, the transaction reporting capabilities (Level I, II or II) referenced above is not defined anywhere in the RFP.

A1. A) The State is amending Section 3.3.1.1 and replacing Section 3.3.1.1 with the following language:

3.3.1.1 Credit card or ePayables
The State of Iowa's Purchasing Cards (Pcards) and ePayable solution (EAP) are commercial payment methods utilizing the VISA credit card network. The State of Iowa will not accept price changes or pay additional fees if Respondent uses the Pcard or EAP payment methods. Pcard-accepting Respondents must abide by the State of Iowa's Terms of Pcard Acceptance, as provided in Section 7.6 of the RFP. Respondents must provide a statement regarding their ability to meet the requirements I this subsection, as well as identifying their transaction reporting capabilities (Level I, II, or III).

B) The State is amending the Table of Contents heading for Section 7 as shown below to match the Section 7 header:

7. Contract Terms and Conditions
   - 7.1. Contract Terms and Conditions
   - 7.2. Special Terms
   - 7.3. Contract Length
   - 7.4. Insurance
   - 7.5. Quarterly Report
   - 7.6. Terms and Conditions for State of Iowa Purchasing Cards
   - 7.7. Administrative Fee

C) The State acknowledges that the section numbering in Section 7 is off by one number starting with the Contract Length section. The State is amending Section 7 by replacing the current Section 7 with the following language:

SECTION 7 CONTRACT TERMS AND CONDITIONS

7.1 Contract Terms and Conditions

The Contract that the Agency expects to award as a result of this RFP shall comprise the specifications, terms and conditions of the RFP, written clarifications or changes made by the Agency to the RFP through an amendment to the RFP in accordance with the provisions of the RFP, the General Terms and Conditions, the offer of the successful Respondent contained in its Proposal, and any other terms deemed necessary by the Agency. No objection or amendment by a Respondent to the provisions or terms and conditions of the RFP or the General Terms and Conditions shall be incorporated into the Contract unless Agency has explicitly accepted the Respondent's objection or amendment in writing.

The Contract terms and conditions in this Section 7 and the General Terms and Conditions will be incorporated into the Contract. The General Terms and Conditions may be supplemented at the time of contract execution and are provided to enable Respondents to better evaluate the costs associated with the RFP specifications and the Contract. All costs associated with complying with these specifications should be included in any pricing quoted by the Respondent.

By submitting a Proposal, Respondent acknowledges its acceptance of the terms and conditions of the RFP and the General Terms and Conditions without change except as otherwise expressly stated in its Proposal. If the Respondent takes exception to a provision, it must identify it by page and section number, state the reason for the exception, and set forth in its Proposal the specific RFP or General Terms and Conditions language it proposes to include in place of the provision. If Respondent's exceptions or proposed responses materially alter the RFP, or if the Respondent submits its own terms and conditions or otherwise fails to follow the process described herein, the Agency may reject the Proposal, in its sole discretion.

The Agency reserves the right to either award a Contract(s) without further negotiation with the successful Respondent or to negotiate Contract terms with the successful Respondent if the best interests of the State would be served.

Type of Insurance	LIMIT	AMOUNT
General Liability (including contractual liability) written on an occurrence basis	General Aggregate Products -- Comp/Op Aggregate Personal injury Each Occurrence	$2 million $1 Million $1 Million $1 Million
Automobile Liability (including contractual liability) written on an occurrence basis	Combined single limit	$1 Million
Excess Liability, Umbrella Form	Each Occurrence Aggregate	$1 Million $1 Million
Property Damage	Each Occurrence Aggregate	$1 Million $1 Million
Workers Compensation and Employer Liability	As Required by Iowa law	A required by Iowa law

Acceptance of the insurance certificates by the Department shall not act to relieve Contractor of any obligation under this Contract. It shall be the responsibility of Contractor to keep the respective insurance policies and coverages current and in force during the life of this Contract. Contractor shall be responsible for all premiums, deductibles and for any inadequacy, absence or limitation of coverage, and the Contractor shall have no claim or other recourse against the State or the Department for any costs or loss attributable to any of the foregoing, all of which shall be borne solely by the Contractor. Notwithstanding any other provision of this Contract, Contractor shall be fully responsible and liable for meeting and fulfilling all of its obligations under this section of the Contract.

7.5 **Quarterly Report**

The Contractor shall provide an electronic detailed quarterly report on all sales made under this agreement within the State of Iowa via E-Mail to the Iowa Department of Administrative Services, Central Procurement, Attn: Nancy Wheelock, nancy.wheelock@iowa.gov. The report file format shall be Microsoft Excel compatible format. The report at minimum shall include the date of sale, customer name and address, full product description, SKU Numbers, quantity, invoice number, unit and extended invoice prices. Respondent proposals must include a sample report and a description of the reporting that will be provided. The State reserves the right to request more detailed information (ad-hoc reporting) at any time and on an individual or specific basis for a specific product, department, time frame, or for a range of products, departments or time frames.

7.6 **Terms and Conditions for State of Iowa Purchasing Cards**

The State of Iowa shall pay Contractor's invoices using its Purchasing Card Program (Pcard) whenever possible. The Pcard is a VISA credit card issued by U.S. Bank to allow authorized employees to make purchases on behalf of the State. It is a faster, more convenient alternative to traditional invoicing and remittance processing, allowing US Bank to pay the Contractor directly, generally within 48 hours of the transaction. Contractor shall comply with security measures for Pcard payments including:

- Contractor shall comply with Payment Card Industry Data Security Standard (PCI DSS) to assure confidential card information is not compromised;

- Contractor shall adhere to Fair and Accurate Credit Transactions Act requirements that limit the amount of consumer and account information shared for greater security protection;
- Contractor shall not write down card numbers or store card information. When accepting orders by phone, Contractor shall process the transaction during the call and send itemized receipts (excluding card numbers) to the cardholder by fax, email, or mail (with delivery);
- Contractor shall process payment for items when an order is placed only for items currently in stock and available for shipment, and only for services already rendered;
- Contractor shall confirm that the name of purchaser matches the name on the card;
- Contractor shall ensure Internet orders are processed via secure websites, featuring Verisign, TRUSTe, BBBOnline, or "https" in the web address;
- Contractor shall shred any documentation with credit card numbers.

7.7 **Administrative Fee**

Without affecting the approved Product or Service prices or discounts specified in the Master Agreement, the State of Iowa shall be entitled to receive a one percent (1.00%) administrative fee on all sales made within the State of Iowa against this agreement. The administration fee due to the State of Iowa shall be paid quarterly by Contractor directly to the State, made payable to the "Iowa Department of Administrative Services – Central Procurement".

D) **The definitions below are industry standard transaction reporting capabilities for Level's 1, 2 and 3:**

Level I - Level I card data is typically associated with consumer transactions and limited purchase data returned to the cardholder. Level I purchasing card data includes the same information captured during a traditional credit card purchase transaction. **This includes: total purchase amount, date, merchant category code and supplier/retailer name.**

Level II - Level II purchasing card data includes the same information captured at Level I, plus the following: **sales tax amount, customer's accounting code, merchant's tax ID number, applicable minority – and women-owned business status and sales outlet ZIP code.** Level-2 data elements benefit the corporate/government/industrial buyer and can often be transmitted via a standard credit card point of sale terminal due to their restricted capabilities.

Level III - Level III purchasing card data includes the same information captured at Levels I and II, plus the following: **quantities, product codes, product descriptions, ship to ZIP, freight amount, duty amount, order/ticket number, unit of measure, extended item amount, discount indicator, discount amount, net/gross indicator, tax rate applied, tax type applied, debit or credit indicator and alternate tax identifier.** Level III is a comprehensive line item detail. This data is equivalent to the information found on an itemized invoice, and requires greater system capability which is provided through 3Delta Systems' payment applications.

Please acknowledge receipt of this addendum by signing in the space provided below, and return this letter with your offer (do not send back separately).

I hereby acknowledge receipt of this addendum.

Signature

26 August 2019
Date

Dexter Turner
Typed or Printed Name