

TRA24-02 - Supply and Delivery of Charging Equipment and Software for Electric School Buses - Specification - Level 3 Charging Station - Technical Specifications, Network Services & Installation

Line	Specifications	ChargeFWD		EV Gateway		Foreseon Technology Inc.		Guillevin International		Hypercharge Networks CORP	
		Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information
Technical Specifications											
1	The charging station is compatible with at least one of the electric buses outlined in the TRA 23-02 document - please specify which model/s	Yes		Yes	Manufacture's Name: Tellus Power Green Model Number (s): TP-EVPD-30KW TP-EVPD-60KW	Yes	ChargePoint Express (CPE250/CPE280) utilize a CCS Type 1 connector. It is compatible with all vehicles that use the same. From the provided models it appears that would include ChargePoint has successfully conducted testing at ChargePoint's interoperability lab in Campbell CA with Blue Bird IC Bus and Lion. ChargePoint's hardware and software tested successfully with the Thomas Built Jouley at the Daimler HQ electric island. e the Micro Bird G5 Bluebird Vision LionC IC Bus and Thomas/Jouley.	Yes	ChargePoint Express (CPE250/CPE280) utilize a CCS Type 1 connector. It is compatible with all vehicles that use the same. From the provided models it appears that would include the Micro Bird G5 Bluebird Vision LionC IC Bus and Thomas/Jouley. ChargePoint has successfully conducted testing at ChargePoint's interoperability lab in Campbell CA with Blue Bird IC Bus and Lion. ChargePoint's hardware and software tested successfully with the Thomas Built Jouley at the Daimler HQ electric island.	Yes	Charging Hardware compatible with all vehicles presented in the TRA 23-02 document.
2	Input Power Supply – 480VAC 60Hz single or three phase - please indicate	Yes	Three phase	Yes	NA	Yes		Yes	ChargePoint Express support a 400 to 480 VAC/60 Hz 3-phase input.	Yes	480 VAC 60Hz Single or Three Phase - minimum
3	Minimum charging power of 24kW - please specify charging output capability	Yes		Yes	EvGateway is proposing 30kW and 60kW chargers. 60 kW chargers will have two connectors with a capability to dispense 30kW power on each connector simultaneously.	Yes	ChargePoint Express 250 (CPE250) can provide up to 62.5 kW to a single port. ChargePoint Express 280 (CPE280) can provide up to 80 kW to a single port. Both units can be electrically paired between two deployed chargers to provide twice the power (125kW or 160kW for CPE250/280) to a single connected vehicle or shared between two vehicles.	Yes	ChargePoint Express 250 (CPE250) can provide up to 62.5 kW to a single port. ChargePoint Express 280 (CPE280) can provide up to 80 kW to a single port. Both units can be electrically paired between two deployed chargers to provide twice the power (125kW or 160kW for CPE250/280) to a single connected vehicle or shared between two vehicles.	Yes	24kW to 180kW
4	Wall-mounted with mounting hardware provided	Yes	Limited due to weight of higher power stations	Yes	30kW is a wall mounted whereas 60kW is a pedestal mounted.	No	ChargePoint CPE250 is available as pedestal only.	No	ChargePoint Express models cannot be wall-mounted. These are pedestal-only surface-mounted. Wall mounted capabilities are available with the Express Plus charging solution or through other integrated 3rd party DCFC manufactures such as ABB's DC Wallbox if required.	Yes	Yes
5	Capable of use 24 hours a day every day of the year in an Operating Temperature of 22F to 122F (-30C to +50C) and Operating Humidity of up to 95% @ 50C (122F) non-condensing	Yes		Yes		Yes	Express stations can be used 24 hours a day and is rated with an operating temperature of -40 to 122 F and operating humidity up to 95% at 122 F.	Yes	Express stations can be used 24 hours a day and is rated with an operating temperature of -40 to 122 F and operating humidity up to 95% at 122 F.	Yes	Yes
6	Weatherproof to minimum of NEMA 3	Yes		Yes		Yes	ChargePoint Express models are weatherproof rated to NEMA Type 3R.	Yes	ChargePoint Express models are weatherproof rated to NEMA Type 3R.	Yes	Yes
7	Connector compliance with Society of Automotive Engineers (SAE) Combined Charging System 1 (CCS1)	Yes	Single or dual CCS1	Yes		Yes	ChargePoint Express models comply; utilize CCS Type 1 charging connector.	Yes	ChargePoint Express models comply; utilize CCS Type 1 charging connector	Yes	Yes
8	CSA cUL or other recognized certification approved for use in Canada	Yes		Yes		Yes	ChargePoint Express adheres to the following UL and cUL standards: UL 2202 UL 2231-1 UL 2231-2 CSA 107.1. ChargePoint AC and DC products are currently in use in Canada.	Yes	ChargePoint Express adheres to the following UL and cUL standards: UL 2202 UL 2231-1 UL 2231-2 CSA 107.1. ChargePoint AC and DC products are currently in use in Canada.	Yes	Yes
9	Charging station cord is a minimum of 5m in length. Please indicate other options available.	Yes		Yes		Yes	Express 280 (CPE280) can be configured with either a 5.5 m (18 ft) or 7.5 m (24 ft) reach. Please note the exception with the ChargePoint Express 250 (CPE250) which has a 4.27 m (14 ft) reach with swing arm.	Yes	Express 280 (CPE280) can be configured with either a 5.5 m (18 ft) or 7.5 m (24 ft) reach. Please note the exception with the ChargePoint Express 250 (CPE250) which has a 4.27 m (14 ft) reach with swing arm.	Yes	Yes
10	Over-current protection that prevents circuit breaker trips	Yes		Yes		Yes	Both CPE250 and CPE280 are tested to IEC 6100-4-5 Level 5 (6 kV @ 3000A). Both products are installed downstream from a dedicated panel with appropriately sized circuit breakers for overcurrent protection. CPE250 utilizes a 100 A breaker; CPE280 utilizes a 125 A breaker.	Yes	Both CPE250 and CPE280 are tested to IEC 6100-4-5 Level 5 (6 kV @ 3000A). Both products are installed downstream from a dedicated panel with appropriately sized circuit breakers for overcurrent protection. CPE250 utilizes a 100 A breaker; CPE280 utilizes a 125 A breaker.	Yes	Yes
11	Display must be liquid crystal display (LCD) light-emitting diode (LED) or equivalent and shall be readable in direct sunlight and at night.	Yes		Yes		Yes	Both CPE250 and CPE280 feature LCDs designed for use in a variety of environmental conditions and use cases.	Yes	Both CPE250 and CPE280 feature LCDs designed for use in a variety of environmental conditions and use cases.	Yes	Yes
12	Must automatically continue to provide a charge to the electric school bus if station loses network connectivity or if remote station management system is offline	Yes		Yes		Yes	Both CPE250 and CPE280 ensure charging can be continued if network connectivity is disrupted.	Yes	Both CPE250 and CPE280 ensure charging can be continued if network connectivity is disrupted.	Yes	Yes
13	Charging station must provide local data storage in the event of a network communication failure. All data automatically uploaded when connectivity is restored. Must have sufficient storage to hold at least 30 days of offline data.	Yes		Yes		Yes	Both CPE250 and CPE280 store charge session data for up to 90 days and will upload to the cloud when network connectivity is restored.	Yes	Both CPE250 and CPE280 store charge session data for up to 90 days and will upload to the cloud when network connectivity is restored.	Yes	Yes

Network Services

<p>1 Station is capable of OCPP 1.6J or later governing communication between the station and the proposed network.</p> <p>2 The following information and controls (at a minimum) are available from the charging station to be integrated with the Purchaser's charging management software:</p> <ul style="list-style-type: none"> - Station identifier + location - Charging station status - Charging session start/stop times - Active charging time - kWh delivered - Charging station utilization/output (kW) - Error messages - Control functions <p>Please indicate additional functionalities.</p> <p>3 Supports remote firmware upgrades</p> <p>4 Supplier is responsible for enabling cellular connectivity to a data network prior to shipping the unit(s). Please indicate proposed network.</p>	<p>Yes</p> <p>Yes</p> <p>Access control load management Billing carbon reporting.</p> <p>Yes</p> <p>Bell / Twillo Super Sim (Roams on Telus Rogers Bell)</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Telus Rogers and Bell are all supported.</p>	<p>Yes</p> <p>ChargePoint Express stations are OCPP 1.6J complaint.</p> <p>Yes</p> <p>ChargePoint charge management software can provide the listed functions and/or information. Control functions include the following allowing a user complete control to optimize fleet charging and electrical costs:</p> <ul style="list-style-type: none"> •Access control •Dynamic power module allocation •Cable Sharing •Charge scheduling •Power Sharing Management: circuit panel and site levels •Plug and Charge •API •Fleet Integration (for telematics) <p>Please refer to Section 2 of the attached ChargePoint Solutions Overview for additional details.</p> <p>Yes</p> <p>All ChargePoint products are networked via cellular connection and can be updated remotely.</p> <p>Yes</p> <p>All ChargePoint products utilize a private cellular network for security purposes; network activation is completed by ChargePoint during the install process.</p>	<p>Yes</p> <p>OCPP 1.6J and soon to be OCPP 2.0.</p> <p>Yes</p> <p>Yes and described in supplemental supporting document.</p> <p>Yes</p> <p>Hypercharge's Cloud Platform supports remote firmware updates across all hardware on Hypercharge pre-configure the charging station prior to shipping the unit and currently SIMs are with TELUS. Can offer customer's preferred carrier if adverse to TELUS.</p>
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Installation (Optional)

<p>1 If providing installation services (optional) all work must be completed under appropriate permit and installation to meet Canadian electrical code requirements.</p> <p>2 Supplier must perform the testing and commissioning of the charging station including the successful charge of an electric school bus using each port so that they are functional and ready for use.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>Yes</p> <p>Foreseeson will comply to Canadian Electrical Code requirements.</p> <p>OPTED OUT</p> <p>Yes</p>	<p>Yes</p> <p>Foreseeson will comply to Canadian Electrical Code requirements.</p> <p>Yes</p> <p>Testing and commissioning is included in our pricing.</p> <p>Yes</p>	<p>Yes</p> <p>all ChargePoint partner program - certified installers available are licensed electricians</p> <p>Yes</p> <p>ChargePoint will commission equipment to ensure operability with customer vehicles. Please see additional information of testing and commissioning of the charging station in document ChargePoint Commissioning Overview.</p> <p>ChargePoint has successfully conducted testing at ChargePoint's interoperability lab in Campbell CA with Blue Bird IC Bus and Lion. ChargePoint's hardware and software tested successfully with the Thomas Built Jouley at the Daimler HQ electric island. Many successful LTD deployments with all the above school bus OEMs.</p>	<p>OPTED OUT</p> <p>OPTED OUT</p>
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Line	Specifications	InCharge Energy		Lion Electric Co		Powerflow		The Mobility House		Wesco Distribution Canada		Western Canada Bus	
		Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information	Yes/No	Additional Information
Technical Specifications													
1	The charging station is compatible with at least one of the electric buses outlined in the TRA 23-02 document - please specify which model/s	Yes		Yes	The ABB chargers are compatible with all the electric vehicles outlined.	Yes		Yes	All electric buses outlined in TRA24-02 are compatible with L3 chargers	Yes	Suitable for all bus options - J1172 for level 2 charger and CCS1 for level 3 charger	Yes	IC Bus
2	Input Power Supply – 480VAC 60Hz single or three phase - please indicate	Yes	The 480V is 3 phase.	Yes	The ABB DC Wallbox has an input power supply of 480VAC 3-phase and 60 Hz.	Yes		Yes	Three phase input	Yes	three phase 480 v	Yes	Single
3	Minimum charging power of 24kW - please specify charging output capability	Yes	We have a 30kW offering.	Yes	The ABB DC Wallbox has an 24 kW output capability. The ABB Terra 54HV has an 50 kW output capability.	Yes	Three options presented: 1) Star Charge 30kW DC L3/Venus AN 30kW V2.0 (No payment terminal) CCS1(100A)/1000Vdc/5m cable 2) Star Charge 60kW DC L3/Athena 60kW UL (No payment terminal) CCS1 (200A)+CCS1(200A) /4.5m Cable 3) Star Charge 240kW DC L3/Triton Dispenser Module 1xCCS1(200A) Ethernet/No Cable management System -Triton Controller (10.4 screen + No Payment)	Yes	L3 chargers specified here range from 24-120kW	Yes	50kW	Yes	24kW
4	Wall-mounted with mounting hardware provided	Yes		Yes		Yes	Star Charge 240kW DC L3 Triton charger is modular with the Power Cabinet requiring a ground mount. The charging modules and interface are wall mount.	Yes		Yes	This is a Floor Mounted model - hardware provided	Yes	
5	Capable of use 24 hours a day every day of the year in an Operating Temperature of 22F to 122F (-30C to +50C) and Operating Humidity of up to 95% @ 50C (122F) non-condensing	Yes		Yes		Yes		Yes		Yes	Meets Requirements	Yes	
6	Weatherproof to minimum of NEMA 3	Yes		Yes		Yes	NEMA 3R	Yes		Yes	Nema 3r	Yes	
7	Connector compliance with Society of Automotive Engineers (SAE) Combined Charging System 1 (CCS1)	Yes	We provide CCS CCS Combo and CHAdeMO options.	Yes	The ABB chargers have a CCS1 charging connector.	Yes	CCS1 Connections	Yes	CCS1 connector for all L3 chargers	Yes	Meets Requirements	Yes	
8	CSA cUL or other recognized certification approved for use in Canada	Yes		Yes		Yes	CSA TUV FCC Energy Star	Yes	All L3 chargers specified here have UL and CSA certification	Yes	Meets Requirements	Yes	
9	Charging station cord is a minimum of 5m in length. Please indicate other options available.	Yes	Yes 25ft	Yes	The ABB DC Wallbox and the Terra 54HV have charging station cords of 7m. The ABB Terra 54HV also has an option of 3.5m.	Yes	30kW Venus: 5m 60kW Athena: 4.5m 240kW Triton: 5m (10m is optional but not quoted)	Yes	18' 20' and 25' cable length options	Yes	15.7 feet	Yes	7m
10	Over-current protection that prevents circuit breaker trips	No	Our DCFC have a built in breaker but it is oversized.	Yes		Yes		Yes		Yes	Meets Requirements	Yes	
11	Display must be liquid crystal display (LCD) light-emitting diode (LED) or equivalent and shall be readable in direct sunlight and at night.	Yes		Yes		Yes	30kW Venus: 7-inch touch screen 60kW Athena: 7-inch touch screen 240kW Triton: 10.4-inch touch screen	Yes		Yes	Yes - meets requirements.	Yes	
12	Must automatically continue to provide a charge to the electric school bus if station loses network connectivity or if remote station management system is offline	Yes		Yes		Yes	Yes this is a config setting with ChargeUp software proposed.	Yes		Yes	Meets Requirements	Yes	
13	Charging station must provide local data storage in the event of a network communication failure. All data automatically uploaded when connectivity is restored. Must have sufficient storage to hold at least 30 days of offline data.	Yes		No	The ABB chargers are using cloud technology to store data. If there is a network communication failure the chargers can be connected with an Ethernet RJ45 cable to reach the cloud.	Yes	8Gb memory card for local storage.	Yes	Offline data stored in local ChargePilot controller	Yes	Meets Requirements	Yes	
Network Services													
1	Station is capable of OCPP 1.6J or later governing communication between the station and the proposed network.	Yes	All industry standard OCPP 1.6-J chargers can communicate with our software. Depending on the age of the equipment InCharge may still be able to connect to the charger network and capture charger session data that we can incorporate into dashboards and reports that are visible in the InControl software platform.	Yes		Yes		Yes		Yes		Yes	

<p>2 The following information and controls (at a minimum) are available from the charging station to be integrated with the Purchaser's charging management software:</p> <ul style="list-style-type: none"> - Station identifier + location - Charging station status - Charging session start/stop times - Active charging time - kWh delivered - Charging station utilization/output (kW) - Error messages - Control functions <p>Please indicate additional functionalities.</p>	<p>Yes</p> <p>InCharge has built its own dealership management platform (InControl) designed to increase uptime and lower the cost to operate a fleet. The software is built with industry-leading security and reliability. It features multi-factor authentication and end-to-end encryption. The platform is designed for scalability of fleets facilities and vehicles with a GraphQL API that increases performance reliability and customization. InControl manages charging stations' access control usage data remote management network operations and advanced load management capabilities. The software reduces operating costs with remote service offerings over-the-air updates and energy management functions. Users can track service warranty and preventative maintenance.</p> <p>Additionally the software provides load management to reduce fleet total cost of operations (TCO) peak energy demand and can generate revenue from incentives and LCFS credits. It is OCPP compatible and interoperability tested with 10 different EV charging OEMs. InControl ensures a comprehensive delivery of services for users with features including but not limited to live session and charger data site yard layout energy and uptime reports real-time updates on charging activity state of charge & charging speed tracking access controls PIN/RFID</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p> <p>Additional functionalities outlined in charging management software specifications</p>	<p>Yes</p>	<p>Yes</p>
<p>3 Supports remote firmware upgrades</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p>	<p>Yes</p> <p>Eaton Charging Network Manager</p>	<p>Yes</p>
<p>4 Supplier is responsible for enabling cellular connectivity to a data network prior to shipping the unit(s). Please indicate proposed network.</p>	<p>Yes</p>	<p>Yes</p> <p>The charger manufacturers are providing the connection to the network once the charger is ready for delivery.</p> <p>The ABB DC Wallbox uses GSM 4G modem and 10/100 and Base-T Ethernet networks.</p> <p>The ABB Terra 54HV uses GSM 3G and 4G modem and 10/100 base-T Ethernet networks.</p>	<p>Yes</p> <p>SIM Card and Data are provided as part of NovaCharge yearly subscription if purchaser opts to use their own software that provider would have to supply the SIM card and data.</p>	<p>Yes</p> <p>Network provider depends on customer location and best available network.</p>	<p>Yes</p>	<p>Yes</p> <p>Capable of multiple networks proposed network to be determined by location.</p>
<p>Installation (Optional)</p>						
<p>1 If providing installation services (optional) all work must be completed under appropriate permit and installation to meet Canadian electrical code requirements.</p>	<p>Yes</p> <p>To ensure complete execution of hardware and software offerings InCharge offers complete installation and commissioning assistance for all products. This includes site development engineering permitting and self-performance capabilities. Alternatively for our customers who are conducting their own make-ready infrastructure InCharge offers an installation service that completes the installation with a final installation / bolt down service that includes field commissioning to ensure the equipment is installed correctly and operational.</p>	<p>OPTED OUT</p>	<p>OPTED OUT</p>	<p>OPTED OUT</p>	<p>Yes</p> <p>Wesco can provide installation service and full turnkey solutions. Pricing can be provided at the time of request by the end users. See uploaded documents for additional information</p>	<p>Yes</p>
<p>2 Supplier must perform the testing and commissioning of the charging station including the successful charge of an electric school bus using each port so that they are functional and ready for use.</p>	<p>Yes</p> <p>InCharge requires a commissioning appointment once stations are installed. During the appointment the stations are tested to ensure they are installed to specifications before the stations can be fully energized. If an issue is found during the commissioning appointment that will be provided to the customer so their installer can rectify the issue.</p>	<p>OPTED OUT</p>	<p>OPTED OUT</p>	<p>OPTED OUT</p>	<p>Yes</p> <p>Wesco can provide installation service and full turnkey solutions. Pricing can be provided at the time of request by the end users. See uploaded documents for additional information</p>	<p>Yes</p>