



GreenPower Equipment data sheets



Electric Vehicle Infrastructure

Terra 54 and Terra 54HV UL DC fast charging station



Building off a decade of EV fast charging experience, ABB's Terra 54 joins the Terra family of bestselling DC fast charging stations for enhanced usability and reliability. The Terra 54 enables continuous 50 kW charging up to 500V, while 200 – 920 V is supported by Terra 54HV.

ABB's Terra 54 includes CCS and CHAdeMO functionality and complies with all relevant international standards, including EMC Class B, required for safe operation at residential, office, retail and fuel station locations. All Terra chargers feature integrated Connected Services for remote monitoring, diagnostics, statistics, and software upgrades.

ABB's Terra chargers are the most preferred DC fast charging solution in the world.

The future-proof solution

ABB EV infrastructure is committed to a future-proof strategy that includes full interoperability, operational reliability, a 24/7/365 service network, best-in-class connected services, and a proactive product roadmap built on close work with OEMs around the world.

The Terra 54 enables the highest uptime due to redundancy on both power and communication. All ABB chargers come with Internet based Connected Services to allow customers to easily connect their chargers to different software systems like back-

offices, payment platforms or smart grid energy systems. This enables remote assistance, tailored diagnostic trouble shooting and repair, and remote updates and upgrades.

Applications

- Commercial shopping and dining areas
- Metropolitan / urban areas
- Highway fuel and convenience stores
- Commercial fleet operators
- EV infrastructure operators and service providers

General specifications	
Environment	Indoor / outdoor
Operating temperature	-35 °C to +55 °C / -31 °F to +131 °F (de-rating characteristics apply)
Storage temperature	-40 °C to +70 °C / -40 °F to +158 °F
Altitude	2500m / 8200 ft (de-rating applies at max altitude)
Compliance and safety	Compliance to UL 2202 and CSA 107.1 and CHAdeMO 1.0
EMC emission EMC immunity	IEC 61000-6-3 Class B - Residential IEC 61000-6-2 Industrial
Input AC power connection	3P +PE (noneutral)
Input voltage range	480 V _{ac} +/- 10 % (60Hz)
Max. rated input current & power	80 A, 55 kVA; power limiting options available
Power factor (full load)	> 0.96
Efficiency	95% at nominal output power
RFID system	ISO/IEC 14443A/B, ISO/IEC 15393, FeliCa™ 1, NFC reader mode, Mifare, Calypso, (option: Legic)
Network connection	GSM / 3G modem, 10/100 Base-T Ethernet
Protection	NEMA Type 3R / IP54
User interface	High brightness full color touchscreen; ADA Compliant RFID, PIN and credit card kit options
Communication	OCPP 1.5 and OCPP 1.6 enabled
Dimensions (D x W x H)	780 mm x 565 mm x 1900 mm 30.7" x 22.2" x 74.8"
Weight	350 kg / 775 lbs
Shipping dimensions (D x W x H)	1200 mm x 800 mm x 2150 mm 48" x 32" x 85"
Shipping weight	375 kg / 830 lbs

Outlet specifications	C	J
Charging standard	CCS	CHAdeMO
Maximum output power	50 kW	50 kW
Output voltage Terra 54	200 - 500 V _{DC}	50 - 500 V _{DC}
Output voltage Terra 54HV	200 - 920 V _{DC}	50 - 500 V _{DC}
Maximum output current	125 A _{DC}	125 A _{DC}
Connector/socket type	CCS-1 / SAE J1772	CHAdeMO / JEVS G105
Cable length	12' and 20' options	12' and 20' options

Main features

- 50 kW DC fast charger supporting CCS and CHAdeMO
- Designed to deliver full output power continuously and reliably over its lifetime
- EMC Class B certified for industrial and residential areas (supports fuel stations, retail outlets, offices, retail)
- Future proof connection via open industry standards, including remote uptime monitoring and assistance, updates and upgrades
- High brightness, daylight readable touchscreen display
- Graphic visualization of charging progress
- RFID authorization
- Robust all weather powder-coated stainless steel enclosure
- Quick and easy installation
- Spare parts are backwards and forwards compatible with Terra 53 product line

New features for Terra 54

- CCS cable exit on the left side for even easier cable management and improved cable handling usability
- Charging EV batteries at 50 – 500 V (Terra 54), or at 200 – 920 V (Terra 54HV)
- New sophisticated connector holders, for easier handling and more stable holding
- Enhanced payment terminal, suited for an increasing number of countries
- Prepared for options like DC metering, integration with building management systems, cable management, etc.

Optional features

- Cable management solution that is reliable, RAL-matched and easy to install in the field
- Customized branding possibilities, including customizable user interface
- Parking bay occupancy detection
- PIN code authorization
- Site load management, for one or more chargers, to avoid expensive grid upgrades
- Web tools for statistics and access management
- Integration with back-offices, payment platforms and smart grid energy systems; can enable OCPP 1.5 and 1.6

—
ABB Inc.
 4050 E. Cotton Center Blvd
 Phoenix, AZ 85040
 United States
 Phone: 800-435-7365
 E-mail: US-evci@us.abb.com

—
ABB Inc.
 800 Hymus Boulevard
 Saint-Laurent, QC H4S 0B5
 Canada
 Phone: 800-435-7365
 E-mail: CA-evci@abb.com

—
 We reserve the right to make technical changes or modify the contents of this document without prior notice. We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents—in whole or in parts—is forbidden without prior written consent of ABB. Copyright© 2019 ABB. All rights reserved.

Express 250

ChargePoint Express 250 Datasheet

Specifications and Ordering Information



Express 250

Ordering Information

The order codes below represent specific product configurations. Other product options are available. Please contact ChargePoint Sales for information and order codes.

Hardware

Description		Order Code
Model	Express 250 Station includes 2x Power Modules, 1x CCS1 cable, 1x CHAdeMO cable (NA)	CPE250C-625-CCS1-CHD
	Express 250 Station includes 2x Power Modules, 1x CCS2 cable, 1x CHAdeMO cable (EU)	CPE250C-625-CCS2-CHD
Option	Other cable combinations are available using CCS1, CCS2 and CHAdeMO connectors.	Please contact ChargePoint sales

Cloud Plans and Software

Description	Order Code
ChargePoint Cloud Plan	Please contact ChargePoint sales
ChargePoint Assure — Prepaid Assure Plan for one Power Module. Express 250 requires 2x EXPRESS-ASSURE n to cover the two Power Modules and the CPE250 station.	EXPRESS-ASSURE n ¹
ChargePoint Assure — Assure Plan for one Power Module and invoiced annually. Express 250 requires 2x EXPRESS-ASSURE n to cover the two Power Modules and the CPE250 station	EXPRESS-ASSURE n -COMMIT ¹
Station Activation and Configuration	CPSUPPORT-ACTIVE

All CPE250 stations require a cloud plan.

¹ Substitute desired years of service (1, 2, 3, 4, or 5 years) for n

Order Code Examples

If ordering this...	...the order code is
Express 250 Station includes 2x Power Modules, 1x CCS1 cable, 1x CHAdeMO cable (NA)	CPE250C-625-CCS1-CHD
3 years of prepaid Assure coverage upon successful site validation. Assure covers Power Modules & station. Express 250 requires 2x EXPRESS-ASSURE3 for its 2 Power Modules.	2 x EXPRESS-ASSURE3
Station Activation and Configuration	CPSUPPORT-ACTIVE

Express 250 Specifications

Station Electrical Input

Input Rating	400V AC, 3-phase, 96A, 50 Hz 480V AC, 3-phase, 80A, 60 Hz
Wiring	L1, L2, L3, Neutral & Earth

Station Electrical Output

Max Output Power	62.5 kW
Output Voltage, Charging	200–1,000V DC
Max Output Current	156A
Max Modules per Station	2

Paired Station Electrical Output

Paired Max Output Power	125 kW
Paired Max Output Current	CCS1: 174A CCS2: 200A CHAdeMO; US: 140A, EU: 125A

Power Module

Max Output Power per Module	31.25 kW
Max Output Current per Module	78 A

Station Functional Interfaces

Max Connector Types per Station	Up to two different connector types per station
Supported Connector Types	CHAdeMO, CCS1 (SAE J1772™ Combo), CCS2 (IEC61851-23)
Cable Length with Swing Arm	Full Horizontal Reach: 4.27m (14')*
Driver Interaction Display	Full-color 254 mm (10 in) LCD display for driver interaction
Top Display	Full-color 508 mm (20 in) LED display for notifications
Authentication	RFID: ISO 15693, ISO 14443, NEMA EVSE 1.2-2015 (UR) Tap to Charge (NFC on Apple & Android) Plug and Charge: IEC 15118-1 Remote: Mobile and in vehicle (if supported by vehicle)

* Horizontal reach to typical vehicle charging port: 3.76m (12'4")

Connectivity Features

Local Area Network	2.4 GHz and 5 GHz WiFi (802.11 b/g/n)
Wide Area Network	4G LTE (fall back to 3G GSM)
Supported Communication Protocols	OCPP
Service and Maintenance	Remote system monitoring, diagnostic, and proactive maintenance

Energy Management Features

Dynamic Power Management	Allows a fixed maximum power output per station or lets the system dynamically manage the power distribution per station
Remote Energy Management	Manage output power via the ChargePoint Admin Portal, API, and Open ADR 2.0b VEN

Safety and Operational Ratings

Vehicle Safety Communication	CHAdeMO – JEVS G104 over CAN, CCS1 – SAE J1772 over PLC and CCS2 — IEC 61851-23
Plug-out Detection	Power terminated per JEVS G104 (CHAdeMO), SAE J2931 (CCS1) and IEC 61851-23 (CCS2)
Station Enclosure Rating	Type 3R, IP54
Station Impact Rating	IK10
Safety Compliance	UL and cUL listed: complies with UL 2202, UL 2231-1, UL 2231-2, CSA 107.1 CE marking: complies with IEC 62196, IEC 61851
Station Surge Protection	Tested to IEC 6100-4-5, Level 5 (6 kV @ 3,000A). In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended.
EMC Compliance	U.S.: FCC part 15 Class A; EU: EN55011, EN55022 and IEC61000-4
Power Module Conversion Efficiency	> 95%
Power Factor	0.99 at full load
Harmonics	iTHD < 5% (Complies with IEEE 519 Requirements)
Power Module Cooling	Liquid Cooling Technology
Operational Altitude	<3,000 m (<9,800 ft)
Operating Temperature	-30°C to 50°C (-22°F to 122°F)
Storage Temperature	-40°C to 50°C (-40°F to 122°F)
Operating Humidity	Up to 95% @ 50°C (122°F) non-condensing

Generic Specifications

Station Dimensions	2,230 mm x 712 mm x 420 mm (7'4" x 2'4" x 1'4")
Station Weight (without Modules)	250 kg (551 lb)
Power Module Dimensions	760 mm x 430 mm x 130 mm (2'6" x 1'5" x 5")
Power Module Weight	45 kg (98.5 lb)

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



ChargePoint, Inc.
240 East Hacienda Avenue
Campbell, CA 95008-6617 USA
+1.408.841.4500 or
+1.877.370.3802 US and Canada toll-free

chargepoint.com

Contact Us

Visit chargepoint.com

Call +1.408.705.1992

Email sales@chargepoint.com

Copyright © 2019 ChargePoint, Inc. All rights reserved. CHARGEPOINT is a U.S. registered trademark/service mark, and an EU registered logo mark of ChargePoint, Inc. All other products or services mentioned are the trademarks, service marks, registered trademarks or registered service marks of their respective owners. June 2019.

CS SERIES



PUBLIC CHARGING STATION

A REAL PRODUCT, FOR THE REAL WORLD. The CS Series from ClipperCreek is designed to take the wear-and-tear of everyday use in all environments. Its tough NEMA 4 outdoor rated enclosure and rubber over-molded connector for the CS-60 and above ensures you can install this unit anywhere with confidence.

- **MANY POWER LEVELS** - 16A to 80A charging
- **QUALITY** - Technology that works for the life of your current plug-in vehicle and then some
- **CONVENIENCE** - 25 feet of charging cable for installation and operation flexibility
- **DURABILITY** - Rugged, fully sealed NEMA 4 enclosure for installation anywhere
- **RELIABILITY**- Backed by ClipperCreek's 1-year warranty, and outstanding customer service

04282017



CLIPPERCREEK

RELIABLE. POWERFUL. MADE IN AMERICA.

ClipperCreek.com

PRODUCT OVERVIEW

To learn more call 877-694-4194 or visit ClipperCreek.com

ELECTRICAL SPECIFICATIONS

- **Service** - 208V to 240V, 20A to 100A, single phase, 2 wire w/ground
- **Charge Current or Output Power** - 208V to 240V, 16A to 80A continuous (3.8kW to 19.2kW)
- **Service Ground Monitor** - Constantly checks for presence of proper safety ground
- **Automatic Circuit Reclosure after minor power faults**
- **Charge Circuit Interruption Device** - Ground Fault Protection with fully automated self-test, eliminates manual user testing
- **Cold Load Pickup** - Time-delayed and randomized to allow seamless re-energizing of unit following power outages
- **External Control Input** - Allows external control from smart meter (AMI), billing or load management device

MATERIAL SPECIFICATIONS

- Indoor/outdoor rated fully sealed (NEMA 4) enclosure
- Operating Temperatures: -22°F to 122°F (-30°C to +50°C)
- 22" H x 17" W x 8" D (559mm H x 432mm W x 203mm D)
- Weight 33 lbs. (15kg) to 45lbs. (20.4kg)
- UL, cUL, ETL, cETL Listed

MULTIPLE CONFIGURATIONS

MODEL:	CS-100	CS-90	CS-80	CS-70	CS-60	CS-50	CS-40	CS-30	CS-20
CIRCUIT BREAKER RATING:	100A	90A	80A	70A	60A	50A	40A	30A	20A
CONTINUOUS CURRENT:	80A	72A	64A	56A	48A	40A	32A	24A	16A

CODES AND STANDARDS

- **UL 2594** Electric Vehicle Supply Equipment
- **UL 2231** Personal Protection Device (i.e., CCID Hardware)
- **UL 1998** Standard for Safety-Related Software
- **UL 991** Standard for tests for Safety-Related Controls Employing Solid-State Devices
- **NEC 625** Electric Vehicle Charge System
- **SAE-J1772™** Electric Vehicle Conductive Charge Coupler

HIGH POWER WIRELESS CHARGING SYSTEMS

Electric Passenger Shuttles

Fast Wireless Charging System

The Momentum charging system is an inductive wireless charging system designed for all types of electric vehicles. Electric passenger shuttles can recharge at hotels, airports, and train stations automatically while the shuttle is loading and unloading passengers. From the moment the vehicle stops over the charger until the vehicle starts to pull away, Momentum's wireless charger is adding energy to the battery with no driver engagement required.

Wireless charging works in all kinds of weather, is not affected by rain, sleet or snow and is at least as efficient as plug in chargers. The Momentum charging system is simple to use, easy to install, and intrinsically safe with no moving parts. It can provide up to 75 kW of power while charging.

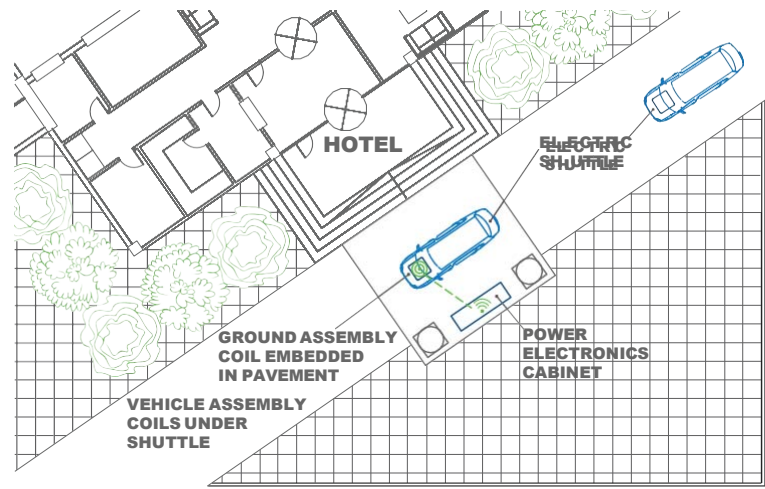


HIGH POWER WIRELESS CHARGING SYSTEMS

Electric Passenger Shuttles



The plan view to the right shows a hotel. Because Momentum's inductive chargers are immune to weather, they can be installed within existing pavement. Each charging pad can service multiple electric shuttles with each making 5 to 10 minute scheduled stops. When a shuttle parks over a charger, charging commences automatically. Drivers receive confirmation of the charging and no further action is required to start or stop the process. Extended warranty and service support contracts are available, which include constant monitoring data, logging, and predictive fault analysis.



Copyright Momentum Dynamics 2018, Patent Pending, All Rights Reserved.

SPECIFICATIONS

REQUIREMENT

REQUIREMENT	SPECIFICATION
Input Power	50/60 Hz three phase 400/480 VAC
Power Levels	Up to 75 kW
Power Factor	>0.99
Power Transfer Efficiency	95% peak (measured from power supply to battery)
Operational Frequency	85 kHz nominal
Logging	Remote monitoring
Physical Requirements	No mechanical movement on ground or on vehicle—system is 100% solid state
Alignment Window	20 cm (8")
Air Gap	Up to 18 cm (7")
Ambient Temperature Range	-25 to +50 degrees C (-13 to +140 degrees F)
Compliance	UL, CE, FCC, IEEE C95, ICNIRP
Foreign Object Detection (FOD)	Provided
Living Object Protection (LOP)	Available
Warranty	2 years with option for extended warranty coverage
OPTIONS	
System Management	Admin dashboard for limiting output power and vehicle authorization
Advanced Power Management	Load balancing of chargers based on SOC, time of day, and system usage profiles
Installation	Project management, design, and installation services available

Momentum Dynamics is pioneering high power wireless charging solutions to enable the rapid growth of electric vehicles and to promote a cleaner environment. We offer a portfolio of advanced charging solutions across multiple markets. The company's U.S. headquarters is located at 3 Pennsylvania Avenue, Malvern, Pennsylvania 19355. Contact us for more information.

SALES: 484-320-8222

info@momentumdynamics.com

www.momentumdynamics.com