Terra DC Wallbox UL Product guide

The Terra DC Wallbox is a compact 24 kW "Destination DC" charger for commercial, workplace and fleet applications.

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- **Future proof, high-voltage technology**
- **Reliable, compact and flexible design**
- **Safe and superior user experience**
- **Always connected, always smart**

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At ABB, we have 135 years of heritage in electrification technology leadership and a world-class EV charging portfolio for safe, smart and sustainable mobility – from the vehicle to grid.

14,000+
connected fast chargers installed worldwide
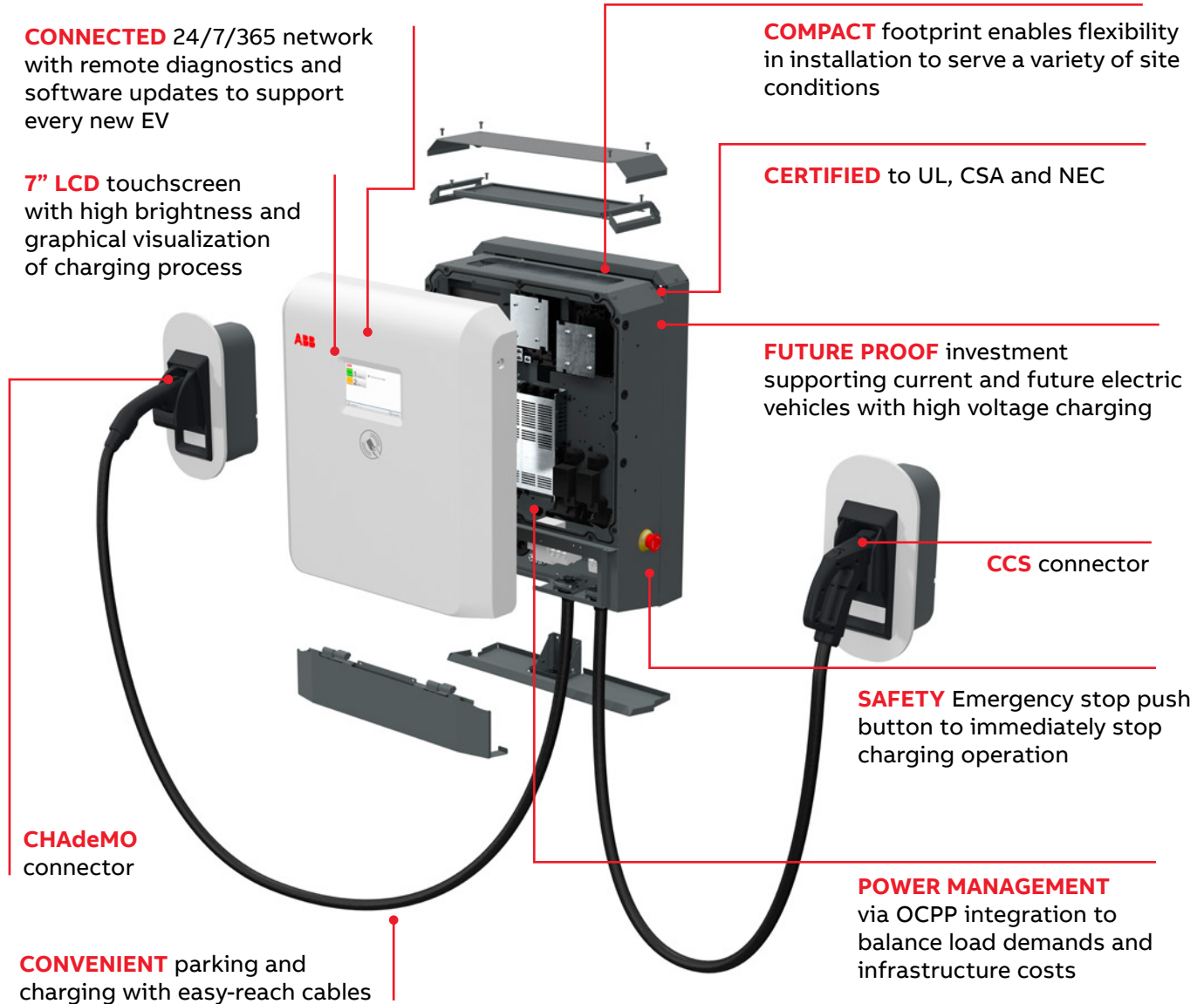
in operation across 80+ countries

R&D and interoperability tested with 50+ OEMs

24/7/365
connectivity with remote services

800 Million+
kWh safely delivered

Terra DC Wallbox
At a glance

CONNECTED 24/7/365 network with remote diagnostics and software updates to support every new EV

7" LCD touchscreen with high brightness and graphical visualization of charging process

CHAdeMO connector

CONVENIENT parking and charging with easy-reach cables

COMPACT footprint enables flexibility in installation to serve a variety of site conditions

CERTIFIED to UL, CSA and NEC

FUTURE PROOF investment supporting current and future electric vehicles with high voltage charging

CCS connector

SAFETY Emergency stop push button to immediately stop charging operation

POWER MANAGEMENT via OCPP integration to balance load demands and infrastructure costs

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CHARGING POWER	MAX CHARGING VOLTAGE	DIMENSIONS
0 … 22.5 kW	CCS 150 … 920 VDC	Height 770 mm / 30.3 in
24 kW (peak)	CHAdeMO 150 … 500 VDC	Width 584 mm / 23 in
1-phase 208/240 V		Depth 294 mm / 11.8 in
3-phase 480 V		Weight 60 kg / 132 lbs

Why Terra DC Wallbox?
Advanced, reliable, safe and smart

Future-proof, high-voltage technology

- Low investment, high utilization charging asset for public or fleet demands

- High-voltage charging range up to 920 V

- 60 A direct to battery charging, no onboard power conversion required

- Fully compatible with current and future EVs

Reliable, compact and flexible design

- Multiple configurations for every commercial or industrial power connection

- High degree of protection against harsh elements and operational environments

- Space-saving, easy to install and brand

- Wall-mounted or free-standing pedestal options

Safe and superior user experience

- User-friendly touchscreen interface for convenient charging

- Evaluated and tested to the highest independent standards

- Safety certified with notified bodies

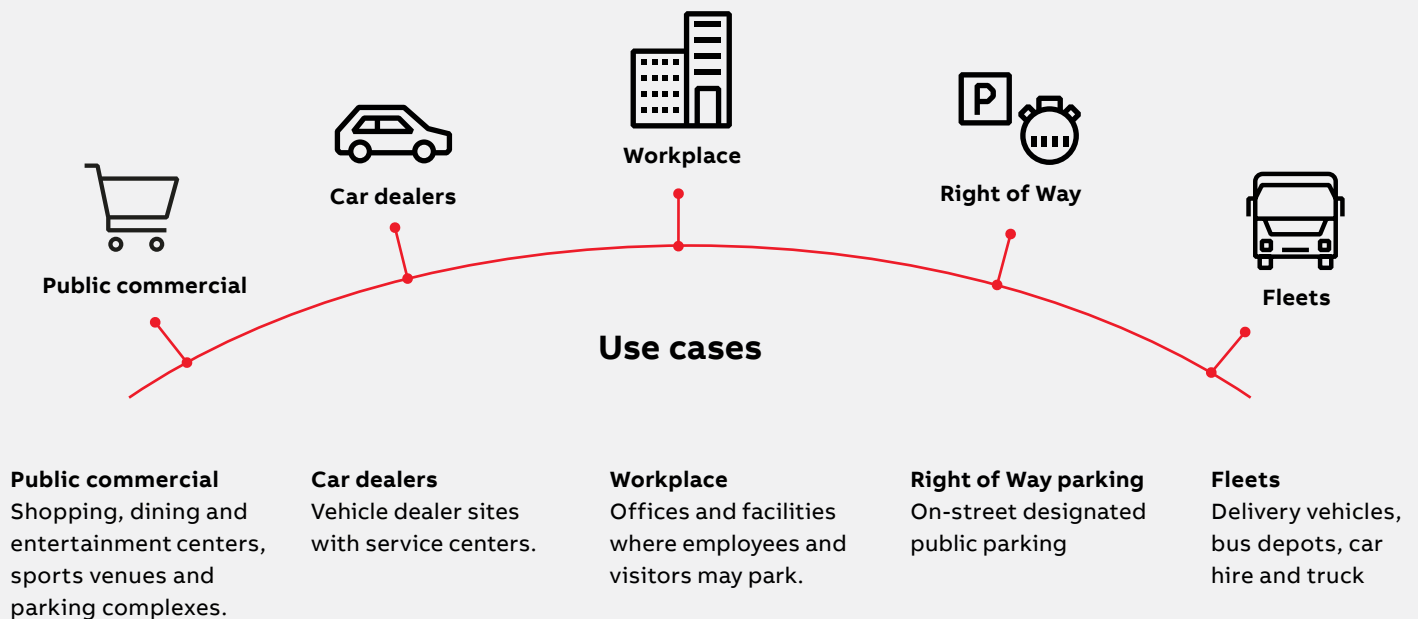- Integrated ground-fault and trip protection

Always connected, always smart

- 24/7 connectivity, 99.5% ABB network uptime

- Remote services with remote firmware updates and upgrades

- OCPP back-end integration as well as ABB Web Tools functionality

- Smart charging support for optimized and cost-efficient usage

Why "Destination DC" charging
Serving multiple right-sized use cases

Workplace

Car dealers

Right of Way

Public commercial

Fleets

Use cases

Public commercial
Shopping, dining and entertainment centers, sports venues and parking complexes.

Car dealers
Vehicle dealer sites with service centers.

Workplace
Offices and facilities where employees and visitors may park.

Right of Way parking
On-street designated public parking

Fleets
Delivery vehicles, bus depots, car hire and truck

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Low power DC is an ideal solution for use cases demanding shorter charging times and higher charging asset utilization than can be provided by AC charging solutions.

With a low power DC solution, charging needs can be met in balance with load demands and infrastructure costs.

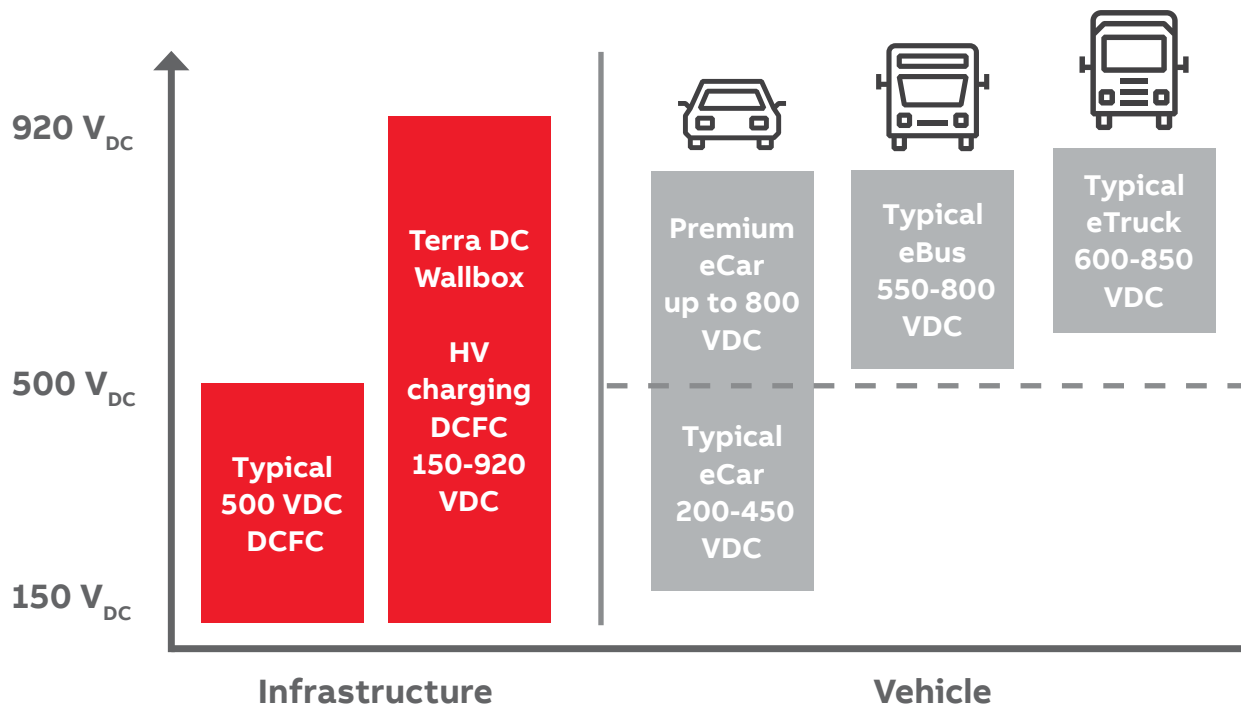# High voltage charging explained
A future-proof strategy

High voltage charging capabilities
As electric vehicles and their use cases diversify, high voltage DC charging has become more important to increase charging power while ensuring as much efficiency, safety and usability in DC charging systems.

Traditional passenger vehicle battery packs are usually designed for 400 VDC charging, so many standard charging systems do not exceed 500 VDC capability. However, some newer vehicles may have battery packs that exceed 400 VDC, often in the 600 to 800 VDC range.

Some EV battery packs, such as with vehicles designed for fleet usage, may only charge at high voltage ratings, demanding charging infrastructure that can deliver power tailored to HV battery packs.

ABB's Terra DC Wallbox is uniquely designed to meet EV battery voltage capabilities up to 920V to deliver charging services across a wider range of today's and tomorrow's EVs.

$920\ V_{DC}$

$500\ V_{DC}$

$150\ V_{DC}$

Terra DC Wallbox

HV charging DCFC 150-920 VDC

Typical 500 VDC DCFC

Premium eCar up to 800 VDC

Typical eBus 550-800 VDC

Typical eTruck 600-850 VDC

Typical eCar 200-450 VDC

Infrastructure

Vehicle

A high range of DC voltage capability is demanded to deliver efficient charging services to every EV and use case.

Terra DC Wallbox charging times
DC charging for every EV destination

Destination DC		Charging time (hours)	
		1-phase **208-240 V$_{AC}$**	**3-phase** **480 V$_{AC}$**
Light Duty	60 kWh BEV 400 VDC	2	1.75
	90 kWh BEV 400 VDC	3	2.5
	100 kWh BEV 800 VDC	3.25	2.75
Medium/Heavy Duty	120 kWh BEV School Bus 400 VDC	4	3.25
	150 kWh BEV Delivery Van 800 VDC	5	4.25
	200 kWh BEV Work Truck 800 VDC	6.5	5.5
	300 kWh BEV 60' Transit Bus 800 VDC	9.75	8.25

Charge times shown based on average vehicle battery management system (BMS) requesting charging power from 20% to 80%.

Terra DC Wallbox
The smart e-mobility investment

Safe, intelligent and future-proof
ABB's Terra DC Wallbox provides DC fast charging capabilities for customers looking for a fast charge with a smaller footprint and lower installation costs. Offering up to 24 kW in peak output power, the Terra DC Wallbox provides a solution for destination and overnight charging.

Main features
- Future-proof DC output voltage range from 150 to 920 V_{DC} supporting EVs today and in the future
- Single or dual outlet: CCS-1 and CHAdeMO
- Daylight readable 7" full color touchscreen display
- Future proof connectivity:
  - OCPP 1.6 and Smart Charging Profiles
  - Capability for remote services and updates
- Compact design
- Robust all-weather enclosure for indoor and outdoor use
- RFID reader

Key optional features
- On-screen PIN code authorization
- Input current limiting software to match site requirements
- Web tools for statistics, configuration, access management, remote diagnostics and repair
- Customized branding
- Pedestal mounted option available

Configurations
The Terra DC Wallbox is available in the following configurations:
- Single outlet CCS-1
- Dual outlet CCS-1 + CHAdeMO
- Single-phase, 208-240 VAC
- Three-phase, 480 VAC

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01 Terra DC Wallbox single-outlet CCS with standard holster

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02 Terra DC Wallbox dual-outlet CCS and CHAdeMO with Gold level holsters

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03 Terra DC Wallbox dual-outlet CCS and CHAdeMO with Gold level holsters mounted on pedestal. Actual pedestal design may vary due to product enhancement.

01   02   03

Terra DC Wallbox
Technical specification UL

Electrical	
Max output power	(1) 19.5 kW at 208 V; (1) 22.5 kW at 240 V; (2) 24 kW peak; 22.5 kW continuous
AC Input voltage	(1) 208-240 VAC +/- 10% (60 Hz); (2) 480Y / 277 VAC +/- 10 % (60 Hz)
AC input connection	(1) 1-phase: L1, L2, GND; (2) 3-phase: L1, L2, L3, N, GND
Nominal input current and input power rating	(1) 100 A; 20.8-24 kVA / (2) 32 A; 26.6 kVA; current limiting options available
Recommended upstream circuit breaker(s)	(1) 125 A / (2) 40 A
Power Factor*	>0.96
Current THD*	IEEE 519 Compliant; 5%
DC output voltage	CCS-1: 150 - 920 VDC; CHAdeMO: 150 - 500 VDC
DC output current	60 A
Efficiency *	94%
Interface and Control	
Charging protocols	CCS-1 and CHAdeMO
User interface	7" full color touchscreen display
RFID system	ISO/IEC14443A/B, ISO/IEC15693, NFC reader mode, Mifare, Calypso
Network connection	GSM/4G modem, 10/100 Base-T Ethernet
Communication	OCPP 1.6 Core and Smart Charging Profiles; Autocharge via OCPP
Supported languages	English (others available on request)
Environment	
Operating temperature	-35 °C to +45 °C (-45 °C to +55 °C with linear derating)
Recommended storage conditions	-10 °C to +70 °C / 14 °F to +158 °C (dry environment)
Protection	IP54, NEMA 3S; indoor and outdoor rated
Humidity	5% to 95%, non-condensing
Altitude	2500 m (8200 ft)
General	
Charge cable	7 m (23 ft)
Dimensions (H x W x D)	770 x 584 x 300 mm; 30.3 x 23 x 11.8 in
Weight	60 kg / 132 lbs excluding backplate (10 kg / 22 lbs) and cables
Compliance and safety	UL 2202, CSA No. 107.1-16, NEC Article 625, EN 61851, EN 62196; CHAdeMO 1.2; DIN 70121, ISO 15118; IEC 61000-6-3; (2) EMC Class B

*Data shown at nominal output power

(1) Single phase configuration
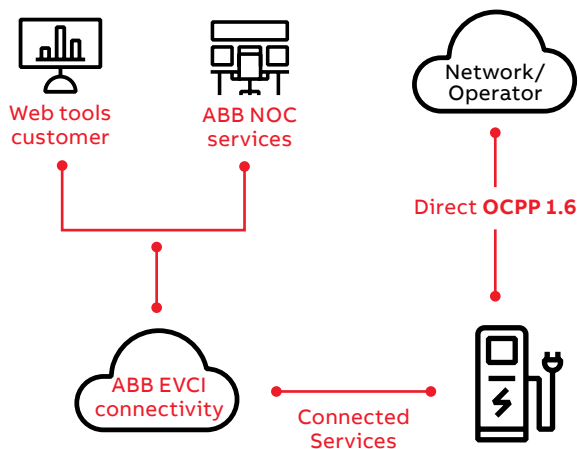(2) Three phase configuration

Flexible OCPP enablement
Back-office integrations backed by ABB connectivity

Network communications
ABB has integrated with nearly every major charging network around the world for OCPP support across public and fleet charging operations. ABB chargers can be operated using a direct OCPP connection while linking to ABB's advanced diagnostics and firmware update services for additional intelligence, technical support as well as reduced maintenance.

Leading the industry in implementing authentication technologies, ABB enables Autocharge coupled with an OCPP server. This functionality offers access control at the vehicle level, ideal for fleet asset telematics. ABB's software engineers work with the latest standardized protocols in the EV charging industry including roaming platforms, energy management software and next generation authentication solutions.

OCPP Integrations

The Open Charge Point Protocol (OCPP) includes a broad set of messages with a wide range of functionality for enterprise telematics and usage data. The transaction-based set-up of the messages makes it easy to connect to a back-end system to process charging sessions, define usage models and handle data. Other capabilities include integration with apps and energy management, such as with OCPP Smart Charging Profiles.

Web tools customer

ABB NOC services

Network/ Operator

Direct **OCPP 1.6**

ABB EVCI connectivity

Connected Services

Autocharge

EV fleets can leverage an Autocharge implementation to meet data and authentication needs seamlessly via an OCPP network integration. ABB supports the Autocharge standard for seamless plug and play charging, eliminating manual authentication methods such as RFID cards and PIN codes. Implemented with OCPP, Autocharge offers networks and fleet operators granularity of data on charging sessions per vehicle, enabling higher utilization and cost optimization of charging assets.

Better and faster support: Chargers connected to ABB's network operations center can achieve the fastest remote support from ABB network engineers. This leads to higher uptime of a charger network, minimizes the number of unplanned on-site visits, and significantly reduces overall operational costs.

Scalability and security: IT resources can scale in the ABB Ability cloud while connectivity monitoring is supported by ABB around the clock. ABB leverages Microsoft Azure based security with fewer backend connections to monitor.

ABB EV Infrastructure services
For highest utilization and lowest downtime

Operational excellence
Charging infrastructure must be optimized for the highest utilization and lowest downtime. This requirement demands that all charging assets are connected around the clock. ABB's connected and real-time services meets that demand, incorporating a decade of experience with thousands of intelligent fast chargers deployed across the globe.

Remote services

- 24/7 connectivity
- Remote services
- Remote diagnostics
- Firmware upgrades
- Driver care web tools
- Charger Care web tools

Parts and warranty services

- Full service warranty process
- Extended warranties
- Preventive service and maintenance
- Network spare parts programs
- Fleet spare parts programs

Custom software services

- OCPP integration
- Autocharge integration testing
- Interoperability testing and validation
- Customized enterprise software support

Training

- Standardized online training
- Customized service training
- Third-party service training programs

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