Terra 94/124/184 UL Product guide

Terra chargers: The most deployed DC fast chargers in the world.

- Power sharing for high utilization
- Future proof, high-voltage technology
- Reliable, compact and flexible design
- Always connected, always smart

With more than a decade of EV infrastructure experience, ABB E-mobility is leading the way to a future of zero emission mobility.

1M+
EV chargers
sold worldwide

in operation
across
85+
countries

A range of
chargers up to
450 kW

12+ years
of EV charging
field experience

24/7
connectivity offered
for remote services

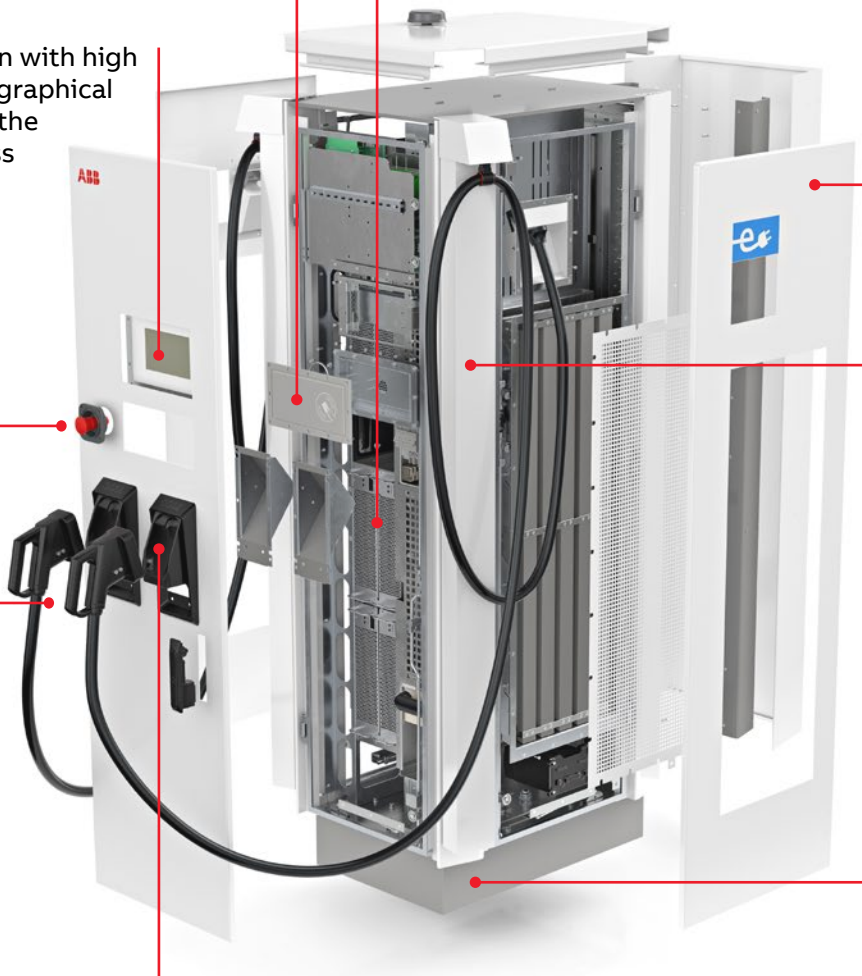
Terra 94/124/184 DC Fast Charger
At a glance

CONNECTED for 24/7 remote services and updates to support every new EV on the road - plus easy remote OCPP integration

REDUNDANT power modules for high reliability; delivers up to 920 VDC in all power configurations for current and future electric cars, trucks, vans and buses

LCD touchscreen with high brightness and graphical visualization of the charging process

ROBUST all-weather powder-coated stainless steel enclosure



SAFETY: Emergency stop push button to immediately stop charging operation

CONVENIENT and hassle-free reach with retractable cable management option

HIGH UTILIZATION with simultaneous charging for 2 EVs – with flexible connector combinations including a high current cable option up to 400 A

EASY installation and serviceability for fast commissioning, maintenance and field services

AUTOMATIC authentication via CCS connector via OCPP and Autocharge functionality as well as ISO 15118 implementations

MAX CHARGING POWER
Terra 94: 90 kW
Terra 124: 120 kW (and 2 x 60 kW)
Terra 184: 180 kW (and 2 x 90 kW)

MAX CHARGING VOLTAGE
CCS 920 VDC
CHAdeMO 500 VDC

DIMENSIONS
Height 1900 mm / 74.8 in
Width 565 mm / 22.6 in
Depth 880 mm / 34.6 in
Weight 395 kg / 871 lbs

Why Terra DC Fast Chargers?
Advanced, flexible, compact and smart

Power sharing for high utilization

- Terra 124 and Terra 184 can charge two vehicles simultaneously
- High utilization of charging assets benefit both public and fleet business models
- Supports all open charging standards in flexible configurations
- Safety certified to the highest standards

Future-proof, flexible high-voltage technology

- Flexible, redundant power architecture supports high uptime
- High-voltage charging range up to 920 V
- Fully compatible with current and future EVs
- Choices for power delivery up to 180 kW, following EV market growth

Reliable, compact and flexible design

- Based on the Terra platform, the most widely deployed DCFC family in the world
- Space-saving, all-in-one footprint with very easy installation and servicing
- Robust construction for all operational environments
- Cable management options enhance longevity

Always connected, always smart

- 24/7 connectivity, 99.5% ABB network uptime
- Remote services with remote firmware updates and upgrades
- OCPP integration-ready as well as ABB Web Tools functionality
- Autocharge and ISO 15118-ready for plug and charge operation

Fast charging beyond 50 kW

Power sharing delivers higher utilization

90kW Charging Points
Terra chargers can provide a quick refill adding 100 miles of range in as little as 15 minutes (Terra 94).*

one EV
up to
90 kW

Retail/Shopping Sites
The Terra 124 charger can provide a full battery charge to two vehicles simultaneously while drivers are shopping, dining or at the movies.

one EV
up to
120 kW

two EVs
each up to
60 kW

Highway corridors and Fleets
The Terra 184 chargers can add 100 miles of range in as little as 10 minutes as well as fast-charge two vehicles at the same time in less than 20 minutes.*

one EV
up to
180 kW

two EVs
each up to
90 kW

* Actual charging speed depends on the electric vehicle model(s) and charging conditions.

Simultaneous charging with high power fast chargers can deliver maximum charging asset utilization while serving an ever-growing population of large battery electric vehicles.

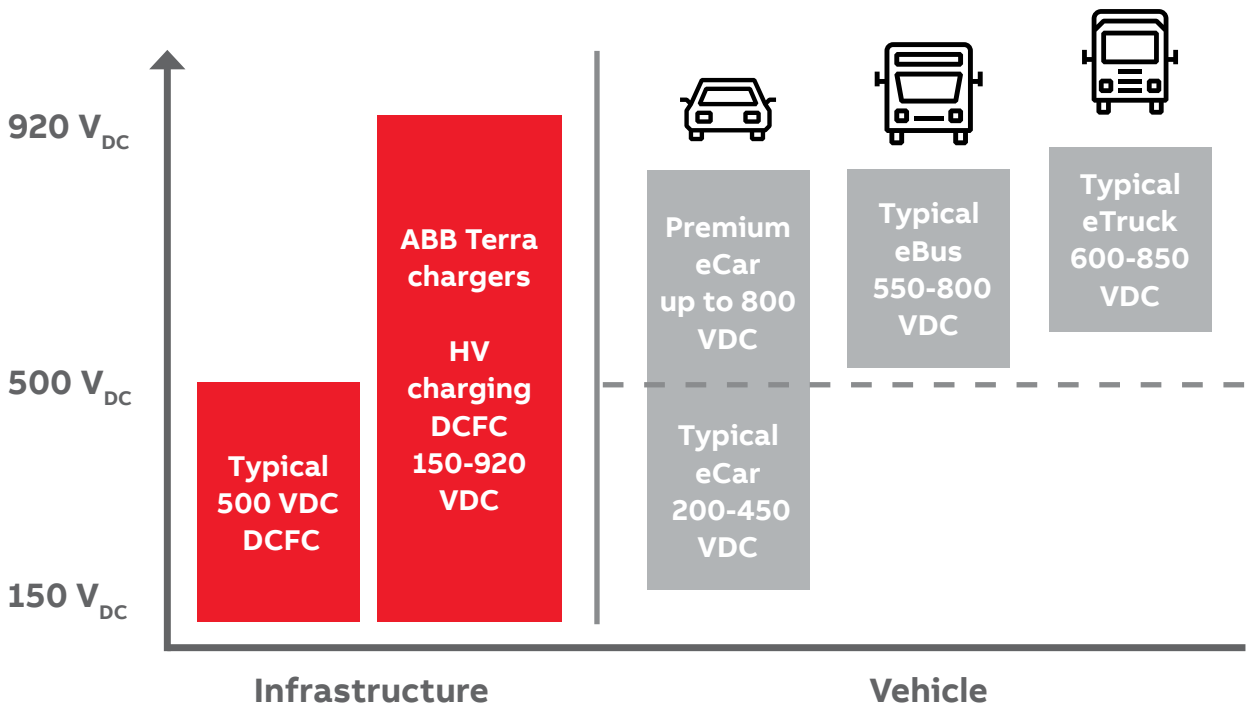
High voltage charging explained
A future-proof strategy

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 94, Terra 124 and Terra 184 chargers are 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.



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

Terra charging times

All-in-one charging for every EV

		Charging time (minutes)					
		50 kW Terra 54 Terra 54HV	**90 kW** Terra 94	**120 kW** Terra 124		**180 kW** Terra 184	
				2 EVs	1 EV	2 EVs	1 EV
Car	60 kWh BEV 400 VDC	50	25	40	20	25	13
	90 kWh BEV 400 VDC	70	40	60	30	40	20
	100 kWh BEV 800 VDC	80	45	65	33	45	22
Bus/Truck	120 kWh BEV School Bus 400 VDC	95	53	80	40	55	26
	150 kWh BEV Delivery Van 800 VDC	120	65	100	50	65	33
	200 kWh BEV Work Truck 800 VDC	160	88	133	66	88	44
	300 kWh BEV 60' Transit Bus 800 VDC	240	130	200	100	130	66

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Charge times shown based on average vehicle battery management system (BMS) requesting charging power from 20% to 80% under mild environmental conditions. Data assumes vehicles capable of charging at cited power levels.

Designed for flexibility
A configuration for every use case

Terra 94/124/184 C
Single outlet CCS shown with cable management system

Terra 94/124/184 CC
Dual outlet CCS shown with cable management system

Terra 94/124/184 CJ
Dual outlet CCS and CHAdeMO shown with cable management system and credit card reader

Power levels
- 90 kW
- 120 kW / 60 kW shared
- 180 kW / 90 kW shared

Charging standards
- CCS+CHAdeMO
- CCS-only single outlet
- CCS-only dual outlet

Cable management
- Reliable, field-tested system
- Designed to meet all cable sizes

CCS cable connectors
- Standard: 200 A
- High current: 300-400 A

User access / payment
- OCPP Integration
- Credit card reader
- PIN via Web Tools
- ISO 15118

Terra DC Fast Chargers
Technical specification UL

Specifications	Terra 94	Terra 124	Terra 184
Electrical			
Maximum output power	90 kW	120 kW or 60 kW x 2	180 kW or 90 kW x 2
AC Input voltage	480Y / 277 VAC +/- 10% (60 Hz)		
AC input connection	3-phase: L1, L2, L3, GND (no neutral)		
Nominal input current and input power rating	115 A, 96 kVA	153 A, 128 kVA	230 A, 192 kVA
Recommended upstream circuit breaker(s)	150 A	200 A	300 A
Power Factor*	> 0.96		
Current THD*	< 5%		
Short circuit current rating	65 kA		
DC output voltage	CCS-1: 150 - 920 VDC; CHAdeMO: 150 - 500 VDC		
DC output current	CCS-1: 200 A CHAdeMO: 200 A	CCS1 200 A, CHAdeMO: 200 A Optional CCS1 300 A (nominal) and 400 A (peak) high current cable(s)	
Efficiency*	95%		
Interface and Control			
Charging protocols	CCS1 and CHAdeMO 1.2		
User interface	7” high brightness full color touchscreen display		
RFID system	ISO/IEC 14443A/B, ISO/IEC 15393, FeliCa™ 1, NFC reader mode, Mifare, Calypso, (option: Legic)		
Network connection	GSM/3G/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 +55 °C / -31 °F to +131 °F (de-rating characteristics apply at extreme temperatures)		
Recommended storage conditions	-10 °C to +70 °C / 14 °F to +158 °C (dry environment)		
Protection	IP54, NEMA 3R; indoor and outdoor rated		
Humidity	5% to 95%, non-condensing		
Altitude	up to 2000 m (6560 ft)		
General			
Charge cable	6 m (19.6 ft)		
Dimensions (H x W x D)	1900 x 565 x 880 mm / 74.8 x 22.2 x 34.6 in		
Weight	350 kg / 775 lbs	365 kg / 800 lbs	395 kg / 870 lbs
Compliance and safety	UL 2202, CSA No. 107.1-16; UL 2231-1, UL 2231-2, CSA STD C22.2 No. 107.1; NEC Article 625, EN 61851, EN 62196; CHAdeMO 1.2; DIN 70121, ISO 15118; IEC 61000-6-3; EMC Class B, FCC Part 15		

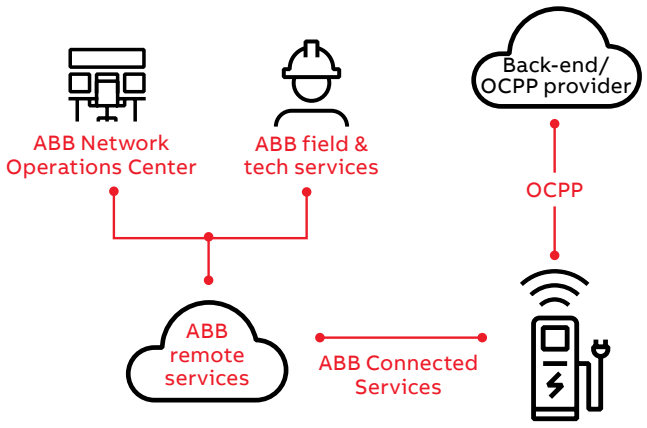
*Data shown at nominal output power

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.



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.

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.

Plug and charge

Eliminating manual authentication methods for drivers while delivering granular data sets to network operators and fleets has never been easier with 'plug and play' charging solutions.

ABB supports Autocharge, in conjunction with an OCPP network integration, to meet vehicle-based authentication demands seamlessly with any CCS vehicle.

Additionally, ABB has proactively enabled ISO 15118 (Plug & Charge) for its charging systems to deliver more advanced plug and play charging experience for the next generation of electric vehicles.

ABB EV Infrastructure services
For high utilization and low downtime

Operational excellence
Charging infrastructure must be optimized for the highest utilization and lowest downtime. ABB's remote and real-time services can meet that demand, incorporating a decade of experience with thousands of intelligent fast chargers deployed across the globe.

ABB's Terra family of all-in-one chargers are easy to service, supporting high uptime due to innovative modularity, round the clock connectivity and experience-led design.

Remote services
- Round-the-clock connectivity
- Remote services
- Remote diagnostics
- Firmware updates and upgrades
- Web tools

On-site service and parts availability
- Standard & extended warranty execution
- Service level agreements
- Preventive service and maintenance
- Corrective service and maintenance
- Spare parts stocking programs

Custom services
- OCPP integration
- Plug and charge integration testing
- Interoperability testing and validation

Training
- Standardized online training
- Product and service classroom training
- Customized service training programs
- Third-party service training programs

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