

# Electric Vehicle Infrastructure

## Terra 54HV UL 50 kW high-voltage DC fast charging station for HV battery electric vehicles



ABB's Terra chargers are the most deployed DC fast charging technology in the world.

ABB's Terra 54HV DC fast charger has been designed to support 50 kW continuous charging for medium and heavy duty vehicles with battery voltages requiring up to 920 VDC, according to the CCS-1 standard.

ABB's Terra 54HV is part of the bestselling Terra DC fast charging family, known for superior usability and reliability as well as integrated Connected Services for remote services and firmware updates.

### Key HV charging applications

- Commercial fleet operations
- Bus and transit depots
- R&D and vehicle development sites
- OEM dealer and service locations

### High voltage DC charging

High voltage DC charging has become an important technology for increased charging power while ensuring efficiency, safety and usability in DC charging systems. ABB's Terra 54HV can deliver up to 920 VDC to enhance power output across a wider range of EVs, such as trucks, vans, buses and other vehicles with HV battery designs.

### Modular, redundant architecture

The Terra 54HV design ensures high uptime due to the redundancy of both power and communication systems. The Terra 54HV power conversion topology consists of five 10 kW power modules connected in parallel with automatic failover functionality should any single power module experience a fault.

### Connectivity

All ABB chargers feature ABB Connected Services to enable remote web tools, reports, diagnostics and firmware updates. Additionally, ABB offers OCPP support for fleets who wish to directly integrate chargers with an OCPP network.

### Autocharge for fleets

EV fleets demand the most reliable and precise charging data tracked at the vehicle level. ABB supports the Autocharge feature via OCPP for plug and play charging allowing authentication, capture and recording of charge session data per vehicle – without the need for manual authentication methods. An Autocharge integration with OCPP can automate asset management so fleets can derive measurable higher utilization along with cost optimization of charging infrastructure investments.

## The future of mobility

ABB is committed to a future-proof vision for EV infrastructure with a high focus on safety, reliability, connectivity and service – built on interoperability and technology development in partnership with OEMs, networks and fleet operators around the world.

### Main standard features

- Supports every EV including those that require voltage up to 920V<sub>DC</sub>
- Designed to deliver full output power continuously and reliably over its lifetime
- Paralleled power module topology with automatic failover offers high uptime through redundancy
- Daylight readable touchscreen display with graphic visualization of charging progress
- Robust all-weather powder-coated stainless steel enclosure
- Quick and easy installation as well as serviceability
- EMC Class B certified for safe use in commercial environments
- RFID authorization
- Enables OCPP 1.6 communication

### Optional features

- Cable management solution that is reliable, RAL-matched and easy to install in the field
- Dual uplink connection with OCPP including remote services and updates
- Autocharge support for plug and play, vehicle-based authentication functionality via OCPP
- OCPP Smart charging profiles for energy management programs
- ABB Web tools for real-time access to charging data as well as authentication modes such as PIN code authorization
- Custom interoperability integration services that streamline OEM R&D efforts

Specifications	Terra 54 HV
<b>Electrical</b>	
Max output power	50 kW continuous
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	64 A, 54 kVA Current limiting options available
Recommended upstream circuit breaker(s)	80 A
Power Factor*	> 0.96
Current THD*	IEEE 519 Compliant; 5%
Short circuit current rating	65 kA; 10 kA optional
DC output voltage	CCS-1: 200 - 920 VDC
DC output current	125 A
Efficiency*	95%
<b>Interface and Control</b>	
Charging protocols	CCS-1
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)
<b>Environment</b>	
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	2500 m (8200 ft)
<b>General</b>	
Charge cable	7 m (23 ft) standard 3.5 m (11.5 ft) optional
Dimensions (H x W x D)	780 x 565 x 1900 mm 30.7 x 22.2 x 74.8 in
Weight	350 kg / 775 lbs
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; EMC Class B

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