



Smarter Mobility

Global product portfolio

ABB is championing e-mobility for a sustainable future, in which smart, reliable, and emission-free mobility will be accessible by everyone, everywhere.

Fortune Magazine recently ranked ABB #8 on its list of companies that are “changing the world” for the advances it has made in e-mobility and electric vehicle (EV) charging.

As title partner of Formula E, the fully electric international FIA motorsport class, ABB is pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 147,000 employees. abb.com

Global leader in EV charging infrastructure

Writing the future together

ABB has years of experience in designing, manufacturing, installing and maintaining electric vehicle charging infrastructure, including several nationwide charger networks

ABB EV infrastructure

ABB has been serving customers for over a century with reliable energy efficient solutions for utilities, industry, infrastructure and transport. Since 2010, ABB is leading the e-mobility revolution with charging infrastructure for any location combined with connected services.

Main features of all ABB chargers

ABB chargers are designed to be durable, reliable and easy to service. Main advantages include:

- Modular and redundant construction to ensure continuous operation
- Industry-grade components to ensure long lifetime and robust operation
- Future-proof, easily upgradable technology
- Remote maintenance and support for an effective, timely response to any irregularity
- Supports the open communication protocol OCPP
- Stainless steel powder coated cabinets for durability, even in cold or humid climates
- User centered design validated by user tests
- Remote charger's power management

ABB Ability™ Connected Services

ABB's Connected Services offering is based on a 24/7/365 monitored platform, which ensures the highest availability. A network operator can select from a modular offering supporting a smooth and seamless integration to back office processes via APIs, and giving access to value adding Web tools for configuration, advanced monitoring and notification.

Key advantages of connected chargers

ABB Ability Connected Services offer four key advantages:

- **Flexibility:** connect to any charging network, back office, payment platform or energy management solution
- **Upgradability:** benefit from the latest industry standards
- **High availability of the service:** based on Microsoft Azure's robust platform
- **Cost efficiency:** avoid development and maintenance costs of proprietary software solutions

Manufacturing and quality system

Key components in ABB DC fast chargers are designed and manufactured by ABB. This ensures full control over hardware and firmware. ABB chargers are manufactured in factories with strict quality systems in place. These factories undergo rigorous quality audits by independent external parties, as well as by automotive OEM clients.

Partnerships with automotive OEMs

ABB EVI has R&D partnerships with many automotive OEMs to support joint development and testing as well as to ensure optimal compatibility between DC fast charger and electric vehicle.

Supporting all EV charging standards

ABB supports all currently available open charging standards, which enables providing charging services to widely available electric vehicles. All chargers can be combined with comprehensive solutions for user authorization, payment and network connectivity.



The key elements to run an EV charging operation

ABB provides all elements to run a successful charging operation.
One stop for hardware, software, connectivity and services.

AC chargers

High quality, cost-effective, easy installation

Products

AC chargers for cars	<ul style="list-style-type: none"> • 4.6 kW and 11 kW AC charging • 22 kW AC fast charging
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DC fast chargers

Reliable, robust, modular hardware:

Products

DC fast chargers for cars	<ul style="list-style-type: none"> • 350 kW High Power charging • 50 kW Fast charging • 24 kW DC wallbox
Heavy vehicle chargers for trucks and buses	<ul style="list-style-type: none"> • Pantograph Down charging from 150 kW to 600 kW • Pantograph Up charging from 150 kW to 600 kW • Connector based charging from 50 kW to 150 kW

Payment and Authentication

Global platform to support local payment and authentication solutions:

- RFID
- Smart phone
- PIN code
- Credit card payment module

Service Level Agreements

Configure a service agreement to match the needs of your organization:

- Proactive monitoring and remote diagnosis
- Certified service teams
- Preventive and corrective maintenance
- Over-the-air software updates and upgrades
- Training programs
- Clear communication and overview via ABB Web tools

ABB Ability™ Connected Services

Integrate with back offices and added value systems:

Charger Connect

Charger Connect	Giving access to the ABB Ability Connected Services platform.
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APIs for back office integration

OCPP 1.6 API	Connect to back office systems via the ABB Cloud
Service API	Support your call center to help EV drivers
Basic Demand Response API	Manage input power of a charger

Dual Uplink – Direct OCPP for back office integration

OCPP 1.6	Connect to back office systems directly from the charger
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Web tools

Browser based tools for real-time charger access

Driver Care	Status, statistics, access management, etc.
Charger Care	Advanced trouble shooting and service tool
Payment	Configure and support payment terminals

Car charging infrastructure

Terra 54 series – 50 kW

ABB Terra 54 is the best-selling 50 kW DC charging station in Europe and North America. Terra 54 enables continuous charging at full 50 kW at 150-500 V, while 150-920 V is supported by Terra 54HV. All models comply to all relevant international standards, including the EMC Class B norm mandated for safe user operation on residential, office, retail and petrol station locations.

Main features and key benefits

- DC fast charger supporting 50 kW CCS and CHAdeMO 2.0, and 60 kW GB
- Charging batteries at 200-500 V (Terra 54), or at 200-920 V (Terra 54HV)
- Designed to deliver full output power continuously
- Simultaneous AC charging via optional 22/43 kW cable or 22 kW socket
- IEC 61000 EMC Class B certified for industrial and residential areas (including petrol stations, retail outlets, offices, etc.)
- Future-proof connection via open industry standards:
 - Flexible interfacing with added value systems
 - Remote uptime monitoring and assistance
 - Remote updates and upgrades

Easy to use:

- Daylight readable touchscreen display
- Graphic visualization of the charging progress
- RFID/PIN/Remote authorization

Configurations

- European, US, and China versions available, for 400 V, 480 V and 380 V AC grid inputs
- Many combinations of the open protocols CCS, CHAdeMO 2.0, GB and AC charging
- 50 to 500 V_{DC}, and up to 125 A output

- 01 Terra 54CT
- 02 Terra 54 CJ
- 03 Terra 54 CJG
- 04 Terra 54 CJ (USA)
- 05 Terra 63 Z (China)





Terra HP – 175 kW to 350 kW

Fast charging just got faster. High power for next gen EVs

Several EV models with larger batteries and longer range are coming. Infrastructure needs are growing. More fast charging points with higher power demands will be needed for drivers to adopt the next generation of electric transportation. ABB has solutions today that will enable this future.

Main features and key benefits

- Ultra-high current of 375 A per individual power cabinet
- Dynamic DC functionality: 500 A per charge post
- Wide voltage range: 150-920 V
- Modular system: 175-350 kW
- Suited for current and next generation EVs
- CHAdeMO and liquid cooled CCS up to 350 kW and 500 A
- 375 A output current per power cabinet to charge fast at 400 V_{DC}
- Dynamic DC to save costs
- Flexible charge
- Scalable installation with integrated galvanic isolation
- Flexible charge cables, advanced liquid-cooling system
- Robust, all-weather enclosure for indoor and outdoor use
- EU and US models available

Dynamic DC
2x 350 kW
2x 500 A
150-920 V_{DC}



DC Wallbox – 24 kW

The ABB DC wallbox is a compact 24 kW DC fast charger for use at offices, shopping areas and car dealerships

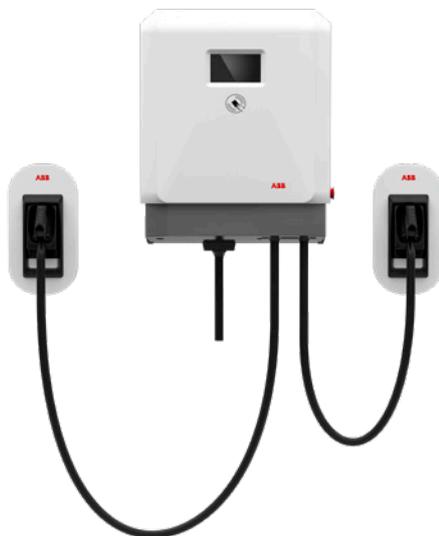
With EV battery capacity increasing, DC charging will emerge in more and more locations. ABB introduces a DC wallbox supporting public and semi-public use. With an output range of up to 920 V_{DC}, it is fully future-proofed to support the next generation of high-voltage electric vehicles.

The ABB DC wallbox is available with single or twin outlets, supporting both CCS and CHAdeMO standards. Day to day operation is simple thanks to a seven-inch full-color, daylight readable touchscreen display. Key functions include: starting and stopping of charge sessions, progress indication during charging, tariff information, help menus, language selection, and PIN code access.

Main features and key benefits

- 24 kW peak, 22.5 kW continuous fast charging
- Future proof due to DC output voltage range from 150 to 920 V_{DC} supporting today's and tomorrow's cars
- 60 A high output current
- Single or dual outlet: CCS and CHAdeMO
- 7" full color touchscreen display
- Future-proof connectivity
 - OCPP
 - Capability for remote services
- Robust, all-weather enclosure for indoor and outdoor use
- Compact design
- EU models: 3 phase input
- US models: single phase input

24 kW
DC Wallbox





AC Wallbox – 4.6 kW-22 kW

The AC charging station for everyone's needs

The EVLunic AC wallbox provides a high quality yet cost effective electric car charging point. Easy to fit and with a compact design, the wallbox can be installed at homes or offices, allowing drivers to simply plug their car in and get on with their day.

The wallbox is ideal for residential and commercial locations, businesses in the hospitality industry and those providing overnight charging facilities. It can also supplement DC charging sites for plug-in hybrid electric vehicles (PHEVs). It features DC leakage detection, which means there is no need for costly upstream Type-B residual current circuit breakers.

Manufactured to a high standard with a robust all-weather enclosure for indoor and outdoor use, the wallboxes are available in four specification levels and are compatible with the industry standard Open Charge Point Protocol (OCPP) making them fully future-proofed and enabled for authentication and load balancing.

Key benefits

- Easy installation - saves time
- Compact design - saves space
- High quality - more reliability
- DC leakage included - saves extra devices

Main features

- 4.6 kW and 11 kW AC charging available
- 22 kW AC fast charging available
- Sealed electronics compartment
- Range of installation options
- Open Charge Point Protocol (OCPP). Pro S and Pro M devices can be connected for OCPP 1.6 and load management
- Authentication
- Monitoring
- Load balancing
- Compact design
- Robust all-weather enclosure for indoor and outdoor use

4.6 kW-22 kW
AC Wallbox



Heavy vehicle charging infrastructure

Connector based

Charge electric buses and trucks with a connector



ABB offers a complete portfolio for charging heavy electric vehicles such as buses and trucks with a CCS connector. Due their large voltage range the DC wall box (24 kW) and Terra 54HV (50 kW) are perfectly suited to charge electric buses and trucks. For higher power the products with 100 kW and 150 kW including sequential charging, are specially designed to charge larger fleets of electric vehicles in its most optimized way.

Main features and key benefits:

- Power range of 24 kW, 50 kW with Voltage range from 150-920 V_{DC}
- Power range of 100 kW, 150 kW with Voltage range from 150-850 V_{DC}
- Sequential charging with up to 3 outlets with 100 and 150 kW
- Compliant with ISO 15118 / DIN 70121 / IEC 61851-23 & -24
- OCPP compliant
- Remote diagnostics and management tools
- EU and US models available

Sequential charging

Instead of having one charger per vehicle, ABB offers sequential charging for the 100 kW and 150 kW chargers. A single power cabinet is paired with up to three depot charge boxes. After the first vehicle has finished charging, the next vehicle will start charging automatically. The advantages are:

- Vehicles are charged with high power, maximizing vehicle availability
- The required grid connection is smaller, reducing initial investments and operational costs
- Optimal utilization of installed infrastructure, meaning lower investments in charging equipment

HVC-150C with 150 kW power cabinet and three depot charge boxes with sequential charging



Pantograph Up

Charge electric buses with a roof mounted pantograph



ABB offers an ideal solution to charge electric buses that are equipped with a roof mounted pantograph. This allows to charge larger fleets of electric buses overnight in a range of 50-150 kW per vehicle and during the day with 150-600 kW for opportunity charging.

Main features and key benefits:

- Voltage range from 150-850 V
- Power range of 50-100-150 kW per outlet for overnight charging
- Power range of 150-300-450-600 kW per outlet for opportunity charging
- Safe and reliable fully automated connection
- Compliant with ISO 15118 / DIN 70121 / IEC 61851-23 & -24
- OCPP compliant
- Remote diagnostics and management tools

HVC-300PU with 300 kW power cabinet and slim design charge pole



Pantograph Down

Charge electric buses following the OppCharge protocol



ABB offers an ideal solution to charge electric buses fully automated following the OppCharge protocol. With typical charge times of 3 to 6 minutes the system can easily be integrated in existing operations.

Main features and key benefits:

- Voltage range from 150-850 V
- Power range of 150-300-450-600 kW
- Charge in 3 to 6 minutes
- One charger can serve multiple vehicle types and brands
- Safe and reliable fully automated connection
- Compliant with OppCharge / IEC 61851-23
- OCPP compliant
- Remote diagnostics and management tools

HVC-450PD with 450 kW power cabinet and standard charge pole



ABB Charger Care

Secure the availability, performance and safety of your EV chargers

Benefit from ABB's experience and expertise servicing thousands of DC chargers and high power chargers up to 350 kW worldwide.



ABB Charger Care

With an ABB Charger Care service agreement, the uptime of charger networks can be optimized and a fast remote and on-site response time can be guaranteed.

ABB Charger Care is available for all ABB EV charging products: Terra fast chargers, Terra HP high-power chargers, heavy vehicle chargers for trucks and buses chargers, DC wallboxes, and AC chargers.

The ABB EVI Service team can tailor a Service Level Agreement (SLA) matching the wishes of the customer's organization. Several modules are available, including proactive monitoring, preventive and corrective maintenance, training programs, spare parts, and software updates and upgrades.

By connecting chargers, service solutions and people, ABB has been able to diagnose more than 95% of the service cases remotely, solving over 60% of these cases without any site intervention in the past two years. This results in significant savings on down-time, travelling, transportation, man-hours and resources.

Main features and key benefits

- Highest uptime and reliability by adequate preventive maintenance.
- Operational savings by remote monitoring, trouble shooting and repairs without site visit.
- Quick on-site repairs by remote diagnosis, modular design, and local spare parts availability.
- Repairs are exclusively performed by ABB certified personnel. This could be ABB's service organization, or the service organization selected by the customer after training and certification by ABB.
- Training modules are available for end-users, customer care personnel and service engineers. Trainings can be hosted at customer location on request.
- Clear communication and case tracking via ABB Web tools.
- Over-the-air software updates and upgrades will be installed on all chargers covered by a SLA.

ABB Ability™ Connected Services

Enabling your charging operation

To successfully run a commercial charging network in a dynamic environment it is crucial to connect EV chargers to the Internet.

The ABB Ability Connected Services platform incorporates many years of experience in connecting thousands of chargers to the Internet.

Connectivity helps EV charging network operators to:

- Remotely monitor and configure charge points
- Service the equipment efficiently and with minimal operational effort
- Increase charger uptime and the reliability of their charging network
- Build a scalable and flexible charging infrastructure
- Minimize investments in IT Infrastructure & Back-end Software
- Up-to-date charging infrastructure with software updates
- Support EV drivers in case they have issues
- Adapt business and pricing models over time

ABB's offering facilitates all above mentioned aspects and is your best choice to run a profitable EV business.

Charger Connect

Charger Connect is the basis for all connected services. It gives access to the ABB Ability Connected Services Platform. Connected chargers receive over-the-air software updates, and are activated in ABB Service Tools. The connection to the chargers and the platform is monitored 24/7/365 by the Network Operation Center (NOC). And ABB service personnel can provide support if issues might arise.

APIs for back office integration

ABB offers standards based APIs supporting smooth integration with back office systems, energy management solutions, and payment services.

Available APIs:

- Open Charge Point Protocol (OCPP) 1.5 API to integrate with back office systems
- Service API with technical status data from the charger for simpler remote diagnostics, helping to improve availability of a charger and to better support EV drivers
- Basic Demand/Response API to dynamically manage the input power of a charger

ABB APIs are based on OCPP – the industry-wide accepted communication protocol – and therefore ensure seamless integration to customers' back office systems. All ABB APIs have openly available specifications.

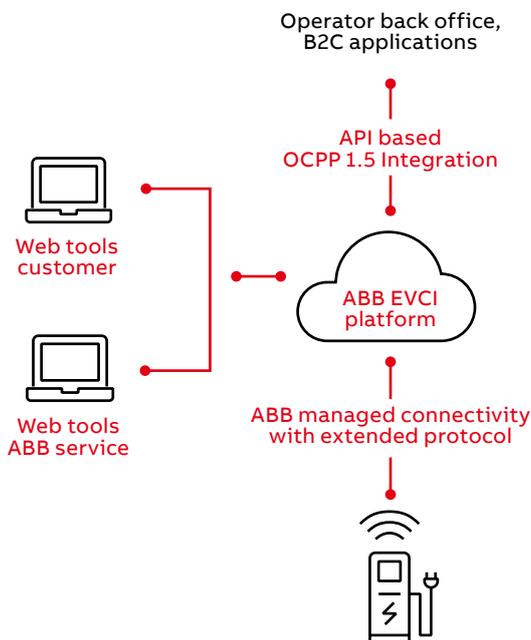
Manage the charger connectivity yourself

The dual uplink connectivity concept provides a solution to directly integrate chargers with OCPP 1.6 based back office systems. The charger remains connected to the ABB cloud to make sure that ABB Service personal can provide fast remote support. This leads to higher uptime of the charger network, minimizes the number of unplanned on-site delegations, and thus reduces costs.

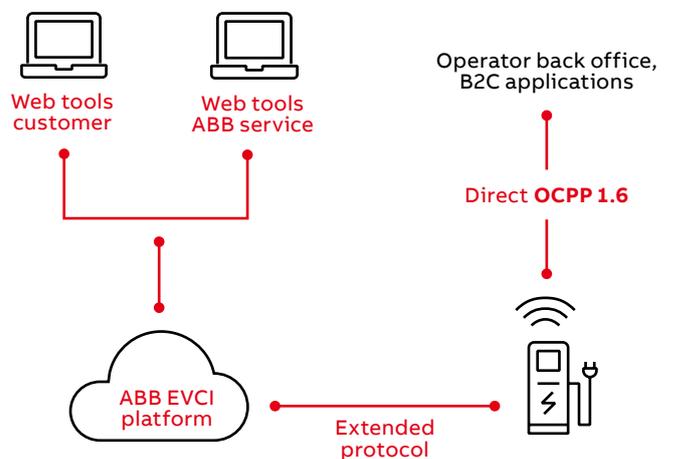
Web tools

ABB offers advanced Web tools to operate and monitor chargers. Web tools allow to see the real-time status of a charger, to configure settings related to authentication, notification and case management and to obtain valuable insights into usage statistics. For chargers equipped with a credit card payment terminal, a Web tool is available to configure the payment device including pricing per session, currency and language. All data is available directly via an Internet browser and can be exported for further processing.

Digital integration - OCPP API Concept



Digital integration - Dual Uplink Concept





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