



# EV Charging Infrastructure

Product Portfolio

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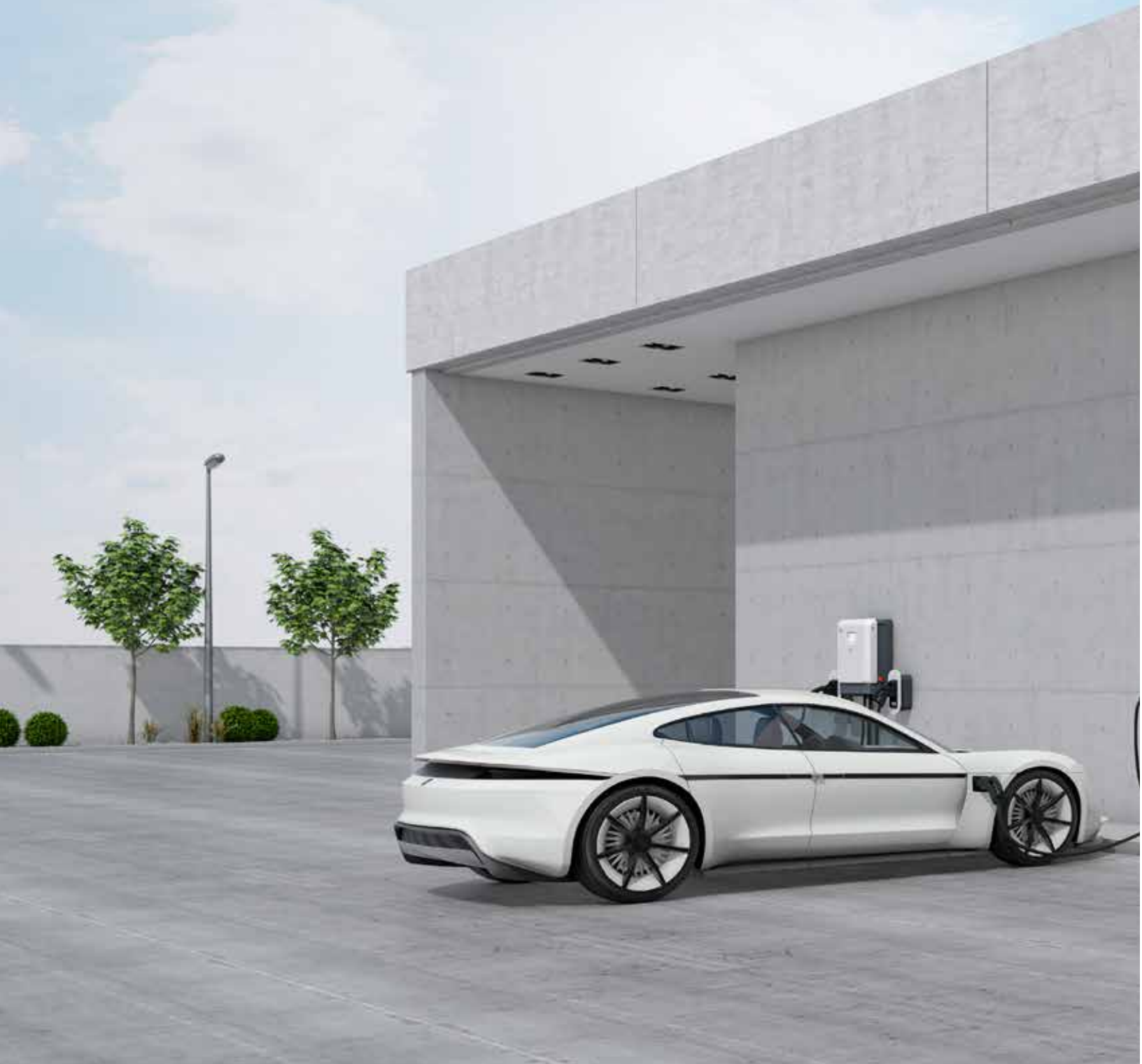
**ABB E-mobility is enabling zero-emission mobility as a global leader in electric vehicle (EV) charging solutions for a more sustainable and resource-efficient future.**

**We are a partner of choice for the world's biggest EV OEMs and nationwide EV charging network operators, offering the widest portfolio of EV charging solutions from smart chargers for the home to high-power chargers for the highway stations of the future, solutions for the electrification of fleets and charging for electric buses and trucks.**

**With ~1,500 employees around the world, ABB E-mobility has sold more than 1 million EV chargers across more than 85 markets, including over 50,000 DC fast chargers.**

CHARGING FOR EVERY EV:

Always safe, always smart,  
and always available.



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# Global leader in EV charging infrastructure

## North American Center of Excellence in E-Mobility

With more than 135 years of heritage in electrification technology leadership, ABB offers a world-class EV charging portfolio with experience in designing, manufacturing, installing and maintaining electric vehicle charging infrastructure, including several nationwide charger networks.

### ABB in Canada

ABB has been serving Canadian customers for over a century with reliable energy efficient solutions for utilities, industry, infrastructure and transport. Reinforcing ABB's commitment to local markets and maintaining best-in-class facilities in Canada, our new high-tech corporate headquarters is located in Montréal, Québec. The facility is ABB's Center of Excellence in E-Mobility for North America.

It is ISO 9001 certified for design, project management, manufacturing, testing and servicing, ISO 14001 certified for environmental standards and OHSAS 18001 certified for Health and Safety standards for more than 20 years.

With a dedicated and local team of sales, service sales, application engineering, and fully-trained service team, the Center of Excellence serves Canada's emerging technologies that power change and help make the nation a global hub for smarter, sustainable transport systems.

### 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 in the network
- Supports open charging 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

### Key advantages of connected chargers

ABB's connected chargers enable fast global service and proactive maintenance. ABB 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 service availability:** 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 car OEMs**

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

**Supporting all EV charging standards**

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

**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 value-added Web tools for configuration, advanced monitoring and notifications.



# 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.

## HARDWARE

AC and DC fast chargers

Reliable, robust, modular hardware.

Products	Features
Personal vehicle fast chargers	from 3 kW to 350 kW +
Bus chargers	Opportunity charging with pantograph from 100 kW to 600 kW Depot/overnight charging from 100 kW to 350 kW

## SOFTWARE AND CONNECTIVITY

Web tools and APIs

Integrate with back-offices and added value systems.

Web tools	Features
ABB Driver Care	Status, statistics, access management, etc.
ABB Charger Care	Troubleshooting resource
Payment management	Configure and support payment terminals

APIs	Features
OCPP API	Connect to back-office systems
Service API	Support your call center to help EV drivers
Demand/Response API	Manage input power of a charger dynamically

### Payment and Authentication

Global platform to support local payment and authentication solutions:

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

### Services : Service Level Agreement

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





# Personal vehicle charging infrastructure

## TERRA "ALL IN ONE" DC FAST CHARGING - FROM 50 KW TO 180 KW

ABB's best-selling family of Terra fast chargers are designed for convenient charging of all types of electric vehicles, including those equipped with high voltage systems. The compact size makes it perfect for every site, while its modularity allows for reliability and flexibility - including power sharing and managed charging.



### Main features and key benefits

- A compact, all-in-one charger from 50 kw to 180 kw
- Terra 124 and Terra 184 can fast-charge two vehicles at the same time
- Paralleled power module topology with automatic failover offers high uptime through redundancy
- Delivers full output power continuously and reliably over its lifetime
- Flexible configurations include CCS-single, CCS-dual and CCS+CHAdeMO-dual outlets
- Up to 920 VDC for every passenger or fleet EV
- Bright, daylight readable touchscreen display with graphic visualization of charging session
- Robust all-weather powder-coated stainless steel enclosure, UL certified

- High short circuit current rating
- EMC Class B certified for safe use at fuel stations, retail centers, offices, and residential-adjacent sites
- RFID authorization modes
- Always connected, enabling remote services, updates and upgrades
- Design enables ADA compliant installations
- Quick and easy installation

### Optional features

- Reliable cable management system available as ordered or field upgrade
- Customizable user interface
- Integrated payment terminal
- Web tools for statistics and PIN access management
- Integration with OCPP networks, payment platforms and energy management
- Autocharge and ISO 15118 enabled

ABB Terra "all in one" chargers are offered from 50kW to 180 kW. The Terra 94 and Terra 124 can be upgraded to 180 kW over time.

Note: upgrading charging systems may require a grid connection upgrade as well as field certification.



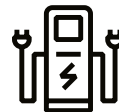
**Terra 54**  
one EV  
up to  
**50 kW**



**Terra 94**  
one EV  
up to  
**90 kW**



**Terra 124**  
one EV  
up to  
**120 kW**



**Terra 124**  
two EVs  
each up to  
**60 kW**



**Terra 184**  
one EV  
up to  
**180 kW**



**Terra 184**  
two EVs  
each up to  
**90 kW**



### COMING SOON TERRA AC WALLBOX – FROM 3 KW TO 19 KW

ABB's TERRA AC Wallbox is a compact charger for car dealerships, offices, shopping centers, overnight fleet charging and homes.

#### Main features and key benefits

- Up to 19kW
  - Up to 80A of high output current
  - Single J1772, 25 ft cable
  - Over current protection, DC leakage protection, Overvoltage CAT III.
  - RS485/P1 or Modbus TCP/IP for connecting an energy meter
  - 5 colour LED
  - Remote updates and upgrades
  - Easy to install: 208 - 240 VAC, single phase
  - Robust, all-weather enclosure for indoor and outdoor use
  - RFID card reader available
  - Pedestal available on demand
  - 4G modem (Optional)
  - Wifi, Bluetooth, Ethernet, RS485
  - Various load management options (static and dynamic)
  - Energy meter (1% accurate over entire current range)
- Future-proof connectivity:
- Flexible interfacing with added value systems
  - Remote uptime monitoring and assistance



### TERRA DC WALLBOX - 24 KW

ABB's TERRA DC Wallbox is a compact charger for car dealerships, offices, public commercial establishments and homes. It is also perfect for fleets, city parking, multi-unit dwellings. The DC Wallbox also has the capability to charge heavy vehicles.

#### Main features and key benefits

- 24 kW DC fast charging
  - 60 A high output current
  - Single or dual outlet: CCS-1 and CHAdeMO
  - Daylight readable 7" full color touch screen display
  - Easy to install: 208 - 240 VAC single phase input
  - Max. input current: 100 A with current limiting option available
  - Robust, all-weather enclosure for indoor and outdoor use
  - cUL and FCC certified
  - RFID card reader available as an option
  - Pedestal available on demand
- Future-proof connectivity:
- OCPP 1.6
  - Capability for remote services
  - Compact design



### TERRA HP - FROM 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, while 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

- 175 kW - 350 kW
- Liquid-cooled charging cables
- Ultra-high output current capability, 350 - 500 A
- Wide voltage range: 150 - 920 VDC
- Flexible charging cables, advanced liquid-cooling system
- CCS and CHAdeMO available
- Robust, all-weather enclosure for indoor and outdoor use
- cUL and FCC certified

# Heavy vehicle charging infrastructure

## Zero-emission bus transit

ABB Heavy Vehicle Charger (HVC) solutions offer high power fast charging systems that allow electric transit buses to charge on-route and at the bus depot, with minimal impact on operation; enabling true zero-emission public transit.

A Heavy Vehicle Charger (HVC) is a high-power fast charging system that allows zero-emission transit buses to operate 24/7, thus enabling true zero-emission public transit.

### Enable zero emission bus transit in your city

With increasing air pollution levels and a stronger public commitment to clean transportation, electric city buses offer a great opportunity to improve life in cities, while also reducing operational costs. ABB's high-power fast charging system solves the key problems for large scale adoption of zero emission electric buses: long charging times and short driving range belong to the past.

### ABB connectivity and services put you in control

All ABB chargers come with an extensive suite of connectivity features including remote monitoring, remote management and smart software upgradeability. These advanced services enable high equipment uptime, a fast response to problems and provide owners of chargers with powerful insight into statistics of their charging operation. Combined with ABB's global presence of service teams we can provide a reliable overall charging solution, anywhere in the world.

### Future-proof solutions for interoperability

ABB's high-power fast chargers are designed to the highest international electrical, quality and safety standards, including IEC 61851-23, guaranteeing safe and reliable operation. ABB has invested heavily into standardization and is a leading authority in all key standardization developments with respect to fast charging. This provides you with the confidence that long term support and industry-wide understanding of the solution is secured.

### ABB is your experienced partner

The new fast charging solution for e-bus charging is based on ABB's solid experience in charging solutions for electric vehicles. For almost a decade, ABB has installed thousands of fast charging systems for electric vehicles around the world and is the globally leading supplier in this market. This unique position and experience are leveraged to provide the best value to our customers.





**DEPOT CONNECTOR-BASE CHARGING SYSTEMS**  
**- FROM 100 KW TO 350 KW**

Save energy without requiring depot staff to monitor the charging procedure with ABB's depot charging solution. This system allows up to three electric buses to be connected and charged sequentially while parked at the bus depot. The logic programmed into the depot feeding station "wakes up" each bus in turn for charging, and then puts them back into "sleep mode" once the charge is complete.

**Main features and key benefits**

- Sequential charging (up to three buses)
- Small infrastructure footprint
- Easy to upgrade power capacity on-site
- OCPP compliant for remote management
- CCS protocol compliant
- Safe and reliable connection
- Remote diagnostics and service



**OPPORTUNITY CHARGING WITH PANTOGRAPH SYSTEMS**  
**- FROM 100 KW TO 600 KW**

ABB's Heavy Vehicle Charger system architecture offers an ideal solution for opportunity charging. With its automated rooftop connection and typical charge time of 3–6 minutes, the system can easily be integrated in existing bus routes by installing chargers at endpoints, terminals and/or intermediate stops.

**Main features and key benefits**

- Charge electric bus in 3-6 minutes
- Easy integration into existing bus lines
- Automated 4-pole rooftop connection
- OCPP compliant for remote management
- Based on international IEC 61851-23 standard
- Safe and reliable connection
- Remote diagnostics and service

# ABB Connected Services

## APIs and Web tools

Internet connectivity is fundamental to the successful operation of a network of EV chargers. It is a flexible, reliable and cost-effective. Get access to best-in-class connected services.

— APIs and Web tools to operate successfully in a dynamic environment

### Connected Services Platform

ABB chargers are connected via a mobile network to the Connected Services Platform – the basis for all APIs and Web tools. The connection to the chargers and the platform is monitored 24/7/365 by the Network Operation Center (NOC).

This platform approach means that ABB DC fast chargers are future-proof; that is, they are accessible in real time and can receive remote software updates as they are launched.

The connection to the platform is not a standalone service but an integrated part of the offering. Building on that, two models are available to interact with the charger: either via APIs or via Web tools. Both approaches can be combined in a modular way depending on you needs.

### 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:

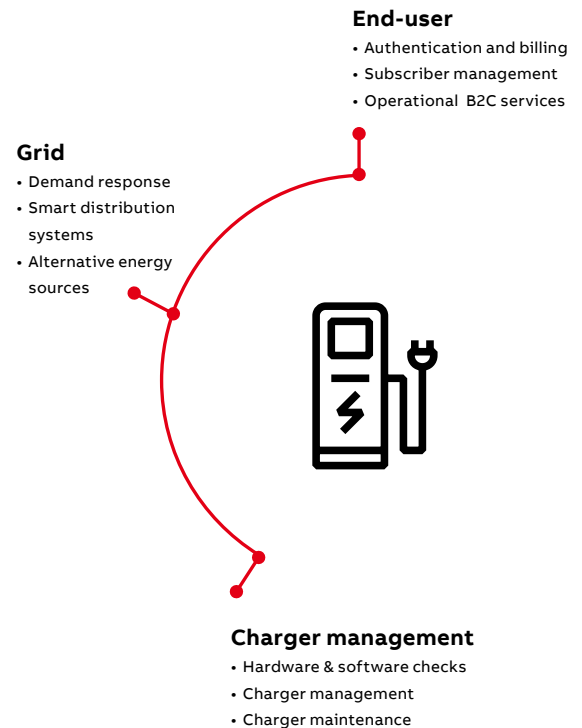
- Open Charge Point Protocol (OCPP) API to integrate with back-office systems
- Service API with technical status data from the charger for simpler remote diagnostics, helping to improve availability of a charger and to better support EV drivers
- Basic Demand/Response API to dynamically manage the input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

### 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. All data is available directly via an Internet browser and can be exported for further processing.

For chargers equipped with a credit card payment terminal, a web module is available to configure the payment device including pricing per session, currency and language.



# ABB Charger Care

## Optimize charger availability

Secure the availability, performance and safety of your EV chargers with an ABB Charger Care service agreement, according to the needs of your organization. Avoid leaving drivers stranded.

### **ABB Charger Care**

With an ABB Charger Care service agreement matching the customer's needs, ABB can reduce the risk of unplanned downtime and rapidly respond if problems do occur.

ABB Charger Care is available for all ABB EV charging products: AC Wallbox, DC Wallbox, Terra "all in one" DC Fast Charging, Terra HP, HVC bus charger.

Together with your local ABB service organization, you can tailor a Service Level Agreement (SLA) matching your organizations wishes. Several modules are available, including proactive monitoring, preventive and corrective maintenance, training programs, spare parts, and software updates and upgrades.

### **Proactive monitoring and remote diagnosis**

Remote condition monitoring and remote troubleshooting are important advantages of ABB chargers. ABB is constantly monitoring over 100 parameters of every charger. We have a geographically separated, redundant server setup with a team of experts in our Network Operations Center (NOC) watching over availability of the server network.

If a charger or the server network signals a problem, either an ABB or a third-party service team automatically receives a trigger. Some issues can be resolved automatically by the charger without any service intervening. Other issues may require a remote or on-site repair. If a repair is required, remote diagnosis enables doing it first-time-right.

### **Certified service teams**

Repairs are exclusively performed by ABB certified personnel. This may be ABB's service organization, or your own service organization after training and certification by ABB.

ABB service teams are ready to offer support 24/7/365 according to your needs and/or your Service Level Agreement.

### **Preventive maintenance**

ABB provides a complete maintenance schedule to keep your chargers in good health.

### **Corrective maintenance**

Remote diagnosis, modular design and clear procedures ensure quick repairs, reducing inconvenience at your location. Spare parts are available from a central warehouse, minimizing lead time.

### **Software updates and upgrades**

Software updates and upgrades will be installed on all chargers covered by an SLA.

### **Training programs**

Training modules are available for end-users, customer care personnel and service engineers. Trainings can take place at your location, on request.

### **Clear communication**

Via ABB Web tools you can quickly track service interventions, spare parts orders, and create cases to be handled by ABB.





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**For more information**  
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