eMobility and residential scenarios
Solutions and charging systems for electric vehicles in private and public parking

Power and productivity
for a better world™

Floor and wall charging stations for private and public parking applications

Charging stations for residential public or private applications, such as car parks or condominium garages, can be placed inside any type of existing installation or can be new concept systems based on renewable energy sources and building automation architectures. In such contexts, the availability of powerful communication features allows to use a platform able to adjust and account for consumptions, which are a critical factor when the charging resources are shared by multiple users.

The charging infrastructures normally used in private and public parking applications are AC floor or wall stations equipped with one or more fixed type-2 sockets compliant with the type 2 European standard and with a rating power of 3.7 kW (16 A/230 V) or 7.4 kW (32 A/230 V).
These charging points are normally intended for parking places where prolonged stops of several hours are expected. A typical case are the overnight stops in the parking lots or in condominium garages, during which you can fully charge the vehicle battery.

This type of chargers covers the basic needs of most users, as the battery life after the overnight charge exceeds the average daily mileage of almost all electric cars in circulation.

AC charging stations for public and private parking applications are available in different versions. The ABB solutions, compliant with the latest regulations and equipped with the most advanced technologies, combine maximum safety for the user, high performance Mode 3 charging, flexibility and many customization options.

Management and resource sharing

Through the open architecture and communication features, ABB floor and wall stations for car parks and condominium garages can be integrated into building automation systems and interconnected via a local or remote supervision system that facilitates the management of the charging points.

When the charging infrastructure is shared by multiple users, a set of solutions should be available in order to optimize the resource use, while protecting a number of aspects concerning robustness, efficiency, safety and protection.
One of the main features offered by the ABB solution is the management of the users enabled to use the charging stations via RFID card or other systems. The control center is able to collect data on the charges carried out (user, duration, energy consumption, etc.) and possibly allocate the costs to charge the expenses.
The platform, interconnected with an energy management system (for example via Ethernet LAN or GPRS modem), also allows to adjust the power provided to each charging point, by possibly reducing the availability taking into account parameters such as the energy cost per hour, the overall consumption of other loads, the availability of renewable sources, and so on.

In the case of private and public parking charging stations powered by the electrical system of a building, a complete integration with an home automation system based on KNX standard is possible, in particular with the load management system, so as to avoid the disconnection of the meter for exceeding the available power.
ABB solutions also provide customizable applications that allow users to view, from an Internet terminal or a smartphone, the status of the individual charging points (free, busy, out of service) and eventually to manage the reservations.
Among the possibilities offered by the ABB platform, is the technical management of the charging stations by the control center of the company, from which you can carry out updates, diagnostic cycles and remote servicing of the individual systems.

Sales management

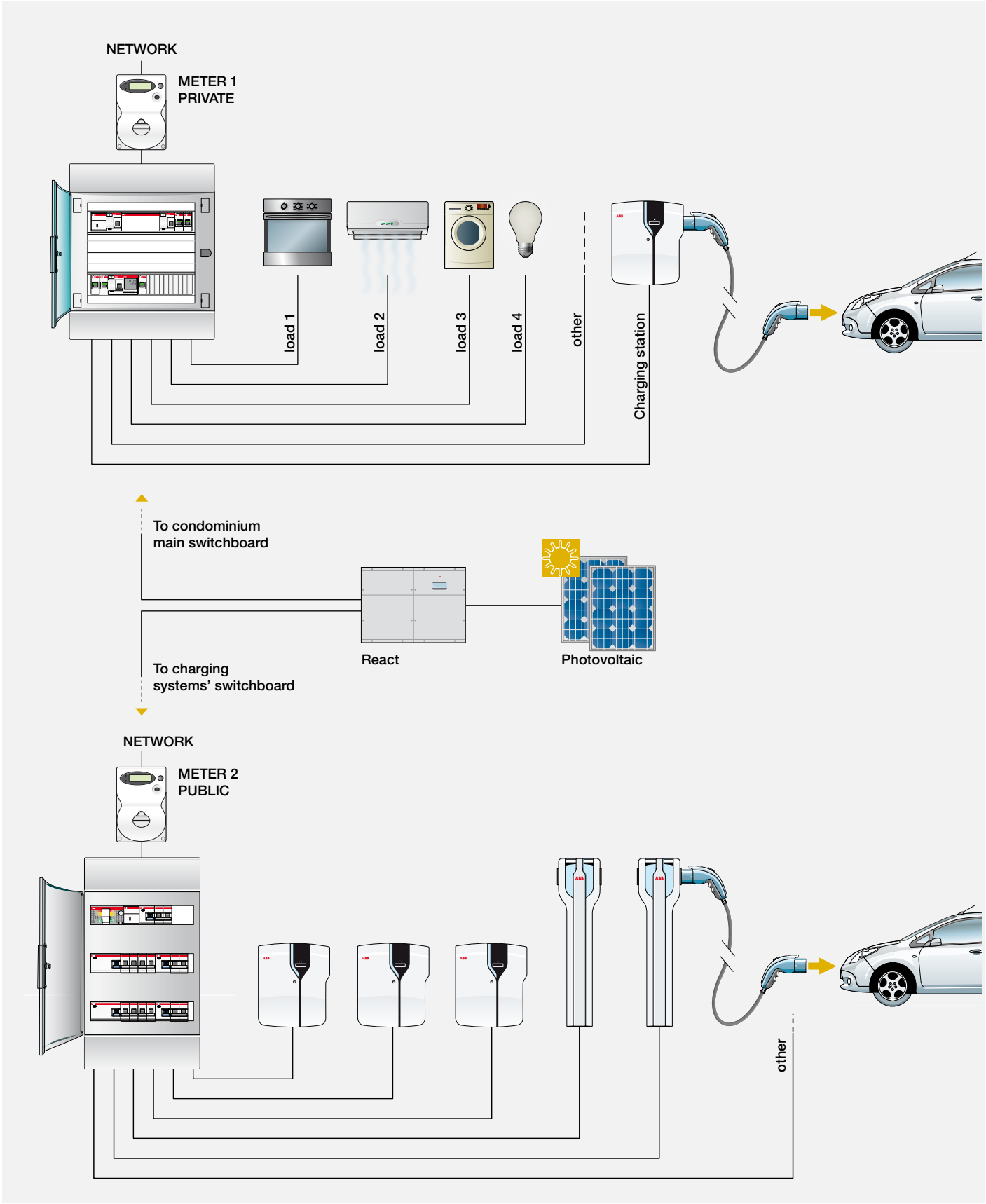
User management
Accounting
Roaming
Payments

Technical management

EVSE static information
EVSE status
Monitoring
Diagnostics
Archiving
Reporting
Remote control
Firmware update

Interface to the network operator

Network power
Wind power
Photovoltaic power


NETWORK
METER 1
PRIVATE
load 1
load 2
load 3
load 4
other
Charging station
To condominium
main switchboard
React
Photovoltaic
To charging
systems' switchboard
NETWORK
METER 2
PUBLIC
other

eMobility
Much more than a system

The charging points for electric vehicles can be powered using the building's collective or individual meters (POD) common to other electric loads, or by using meters dedicated to vehicle charging and any heat pumps (as allowed by resolution of 19 April 2010 of the Authority for Electricity and Gas - ARG/elt 56/10 in derogation to the obligation of a single meter point per housing unit). These PODs are governed by contracts for low voltage loads devoted to "other uses".

In the case of charging points for collective use, the amount of electric power can be divided among different users depending on the actual use, or measured by a common meter applying a flat rate, in this way reducing the administrative costs.
The architecture also allows you to integrate the power supplied by the charging points with the energy produced locally by renewable sources, typically photovoltaic, and stored by the storage systems of the structure.
Integrating this solution in the building's smart grid, helps to increase the consumption of renewable energy.

Floor stations

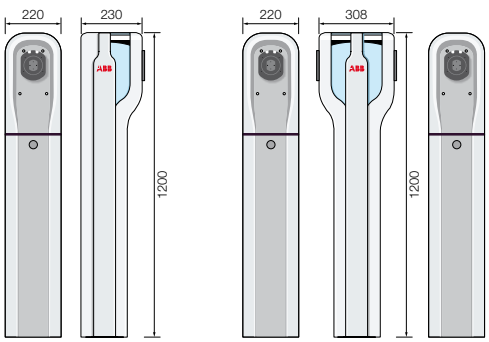
Technical specifications

	Private/Public	Private/Public	Public	Public	Public
Order code	**1SLM200700A1110**	**1SLM200700A1210**	**1SLM202200A2210**	**1SLM202200A3110**	**1SLM202200A3210**
Charging mode	Mode 3	Mode 3	Mode 3	Mode 3	Mode 3
No. of sockets	1	2	2	1	2
Type of sockets	Type 2, lockable	2 x type 2, lockable	Type 3A + type 2	Type 2, lockable	2 x type 2, lockable
Output power	7,4 kW	2 x 7,4 kW	3,7 kW + 22 kW	22 kW	2 x 22 kW
Manual setting, lower power	3,7 kW	2 x 3,7 kW	-	11 kW	2 x 11 kW
Current/Voltage	32A/230V	2x 32A/230V	16A/230V + 32A/400V	32A/400V	32A/400V
Current adjustment	16A - 32A (manual)	16A - 32A (manual)	-	16A - 32A (manual)	16A - 32A (manual)
IP rating	IP54	IP54	IP54	IP54	IP54
Temperature	-30 +50°C	-30 +50°C	-30 +50°C	-30 +50°C	-30 +50°C
Shock protection	IK10	IK10	IK10	IK10	IK10
General disconnector with release coil for circuit opening in the event of contactor failure	■	■	■	■	■
Differential	A (OPN)	A (OPN)	A (OPN)/B	Type B	Type B
Display	LCD 20x2	LCD 20x2	LCD 20x2	LCD 20x2	LCD 20x2
LED	RGB	RGB	RGB	RGB	RGB
Energy meter (Single-phase pulse/dig. three-phase and ModBus)	■	■	■	■	■
RFID reader	MiFare	MiFare	MiFare	MiFare	MiFare
Noise reduction filters	■	■	■	■	■
Weight (kg)	25	25	25	25	25

Order codes

Description	Order code
7.4 kW single-phase column adjustable to 3.7 kW with 1 type 2 socket and RFID	**1SLM200700A1110**
7.4 kW single-phase column adjustable to 3.7 kW with 2 type 2 sockets and RFID	**1SLM200700A1210**
3.7 kW single-phase column with 3A type socket and 22 kW three-phase column with 1 type 2 socket and RFID	**1SLM202200A2210**
22 kW three-phase column adjustable to 11 kW with 1 type 2 socket and RFID	**1SLM202200A3110**
22 kW three-phase column adjustable to 11 kW with 2 type 2 sockets and RFID	**1SLM202200A3210**

Dimensions



Dimensions in mm

Wallbox charging stations

ABB's AC wallbox charging stations fit perfectly to the application needs in single condominium parking spaces and allow to top up the vehicle battery safely and efficiently. Two versions are available:

- stations with a fixed charging cable with a connector equivalent to that of user's vehicle (type 1 or type 2 connector) - ideal for purely household installations (such as a private garage);
- stations with type 2 charging socket - ideal for private or commercial use (e.g. garages).

ABB's wallbox charging stations use the charging mode 3 in accordance with European and international standards.
In addition to the constant control of the vehicle's mass connection to the ground, the system allows the communication between the charging equipment and the electric vehicle.
ABB's wallbox stations equipped with a socket power the electric vehicles with a type 2 connector on the infrastructure side and share most of the features of the floor columns.

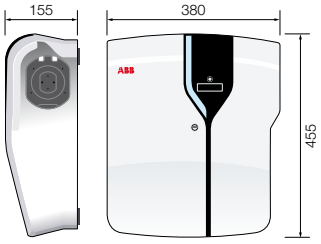
Technical specifications

Output specifications	Private	Private
Order code	**1SLM100300A1111**	**1SLM102200A3110**
Charging mode	Mode 3	Mode 3
Power output	7,4 kW	22 kW
Current/Voltage	32 A / 230 V	32 A / 400 V
Frequency	50/60 Hz	50/60 Hz
Current adjustment (manual)	32A - 25A - 20A - 16A - 13A - 10A - 6A	32A - 25A - 20A - 16A - 13A - 10A - 6A
1/2 power button	-	-
Remote control contacts	■	■
IP rating	IP54	IP54
Temperature	-30 +50°C	-30 +50°C
Shock protection	IK10	IK10
Socket/Cable	T2 socket with door	T2 socket with door
General disconnector with release coil	■	■
Display	LCD 16x2	LCD 16x2
LED	RGB	RGB
Start and stop key switch	-	-
Energy meter (single-phase pulse/digital three-phase and ModBus)	■	■
RFID reader	■	■
Weight (kg)	10	10

Order codes

Description	Order code
7.4 kW single-phase Wallbox adjustable to 3.7 kW with 1 type 2 socket and RFID	**1SLM100700A1111**
22 kW three-phase Wallbox adjustable to 11 kW with 1 type 2 socket and RFID	**1SLM102200A3110**

Dimensions



Dimensions in mm

Contacts

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