



Low Voltage Products

Components for e-mobility applications

Moving the world in a new way

ABB and e-mobility

Every day, more than half of oil barrels produced worldwide is used to fuel our cars. This fossil fuel consumption is a major cause of the increasing pollution, especially in urban areas, where it is forcing many cities to implement more restrictive plans on traffic circulation. As oil price rises, the focus of both the automotive industry and energy utilities is moving more and more on alternative mobility systems that allow both saving money and reducing carbon emissions.

The electric mobility, commonly called e-mobility, is the answer to these needs, and the electric vehicle is its most outstanding performer. This new approach provides the only practical alternative that will reduce at the same time the emission of particulate matter while significantly cutting the cost of transportation.

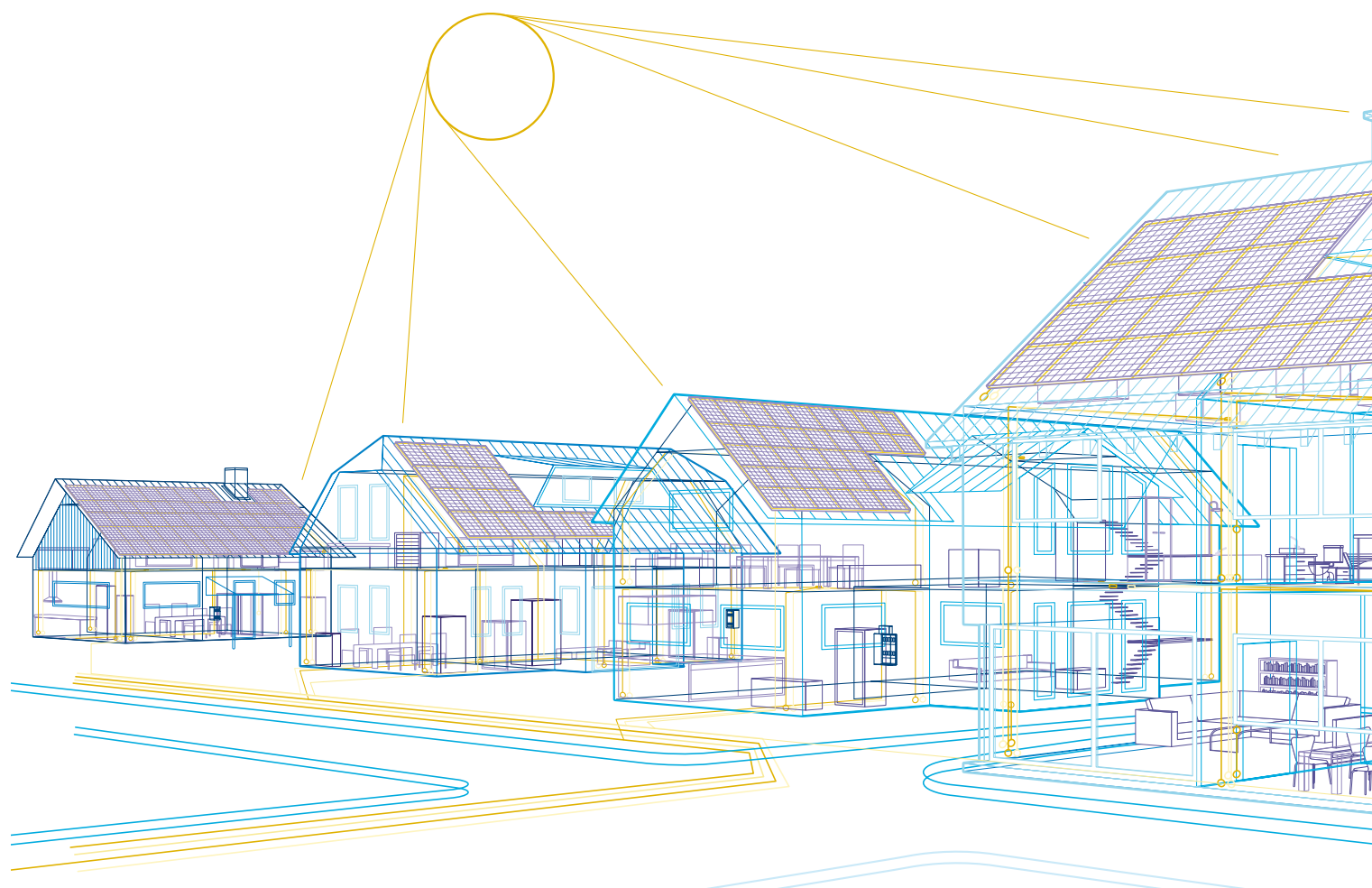
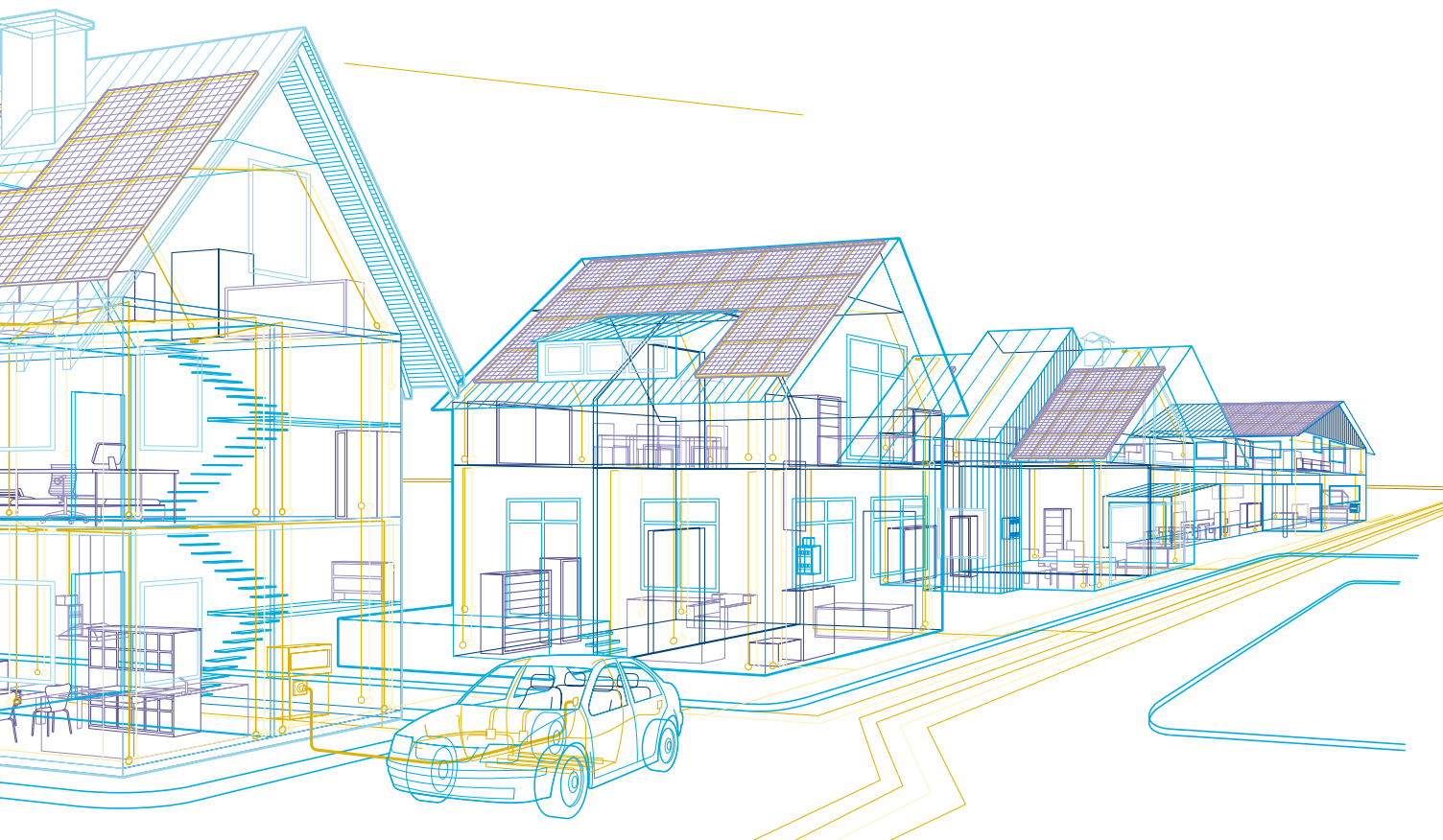


ABB feels a strong commitment to e-mobility. A commitment towards utilities and infrastructure providers to offer integrated smart charging solutions; a commitment towards the driver to enable safe recharging at the required speed; a commitment towards the environment to make individual mobility more sustainable and allow for e-mobility powered by renewables.



Choose the best solutions, design your own future. E-mobility charging points

ABB already has a comprehensive product range suitable to realize all types of charging points, whether for internal or external installations, wall-mounted or poles. Thanks to its reliable, safe and modular components, ABB is the perfect partner for your own e-mobility solutions.

ABB's complete offering of energy meters, RCBOs, circuit breakers, switches, enclosures, plugs, sockets and connectors can be combined to realize any kind of charging point for electric vehicles, while the ABB AC500 PLC range grants the required control with internet and substation communication options. All ABB's products comply with the common standards and are suitable even to the most extreme environmental conditions and locations.

Residential charging

Home chargers deliver efficient, low power vehicle charging that can refill a battery during the night, reaching full capacity before morning. Charging overnight ensures that the load on the grid is low, and the car is refilled economically using low cost night-rate power.

A range of home chargers can be designed to suit the needs of different homes – indoor, outdoor, wall mounted - all incorporating the safety systems you can expect in any home appliance. ABB products are easily integrated and suitable for DIN rail mounting, permitting the realization of small, safe and reliable residential charging solutions.

Public charging

Public chargers are semi-fast charging solutions that can charge a battery in a few hours while the driver is at work, or be used to keep the car charged up during everyday activities such as shopping or dining out. These charging poles will be found throughout the town or city at company parking, public buildings, stores and large car parks. These charging poles are built strong and safe to fit the requirements of a public space. ABB components provide the necessary safety measures, complying with the most common standards requested for public charging applications.

Ultrafast charging

Ultrafast chargers allow a 'fuel stop'-equivalent for electric vehicles, charging the car in the shortest possible time. Combined with the latest battery technologies, this allows a full re-charge in less than ten minutes.

These chargers will be installed in highway rest areas and convenient city refueling points.

Grid energy management and power quality are provided by state of the art power electronics, smart grid interfacing and integrated energy storage to manage the variations in power production.

The vehicle connections will be based on industry standards, ensuring compatibility with all vehicles.

Smart Home

ABB's e-mobility offering is not only confined to components for charging system. Thanks to the KNX technology, ABB Home Automation systems, allow to monitor in real-time the charging of the car battery directly from the living room.

Domestic charging solutions may be internal, external, wall-mounted. ABB offers all the necessary safety and control components to develop personalized, safe and efficient charging points.



Examples of ABB components integration for EV charging stations

EV Charging wallbox 16A 230V MOD3 -1 T.3

Main components	Code
Switch Disconnecter EB202 - 63A	2CDE282789R2063
RCBOs DS202C M C16 A30	2CSR272140R1164
PLC AC500	Depending on application
Contactor ESB 24-31 24V AC/DC	GHE3291602R0001
Power supply CP-D 24/1.3	1SVR427043R0100
ABB Enclosure for wall-mounted solutions	Depending on application

EV Charging wall-box, 32A 230V MOD3 -1 T.3

Main components	Code
Switch disconnecter EB202 - 63A	2CDE282789R2063
RCBO DS202C M C32 A30	2CSR272140R1324
PLC AC500	Depending on application
Contactor ESB 63-40 24V AC/DC	GHE3 691 102 R0001
Power supply CP-D 24/1.3	1SVR427043R0100
Ethernet Communication Adapter CEM 05100	2CMA137099R1000
Energy Meter DBB13000	2CMA180801R1000
ABB Enclosure for wall-mounted solutions	Depending on application

EV Charging unit for billing system, 16A 230V MOD3 -1 T.3

Main components	Code
PLC AC500	Depending on application
RCBO DS951A-B16/0,03	2CSR955101R1105
Power supply CP-D 24/1.3	1SVR427043R0100
Ethernet Communication Adapter CEM 05100	2CMA137099R1000
Energy Meter DBB13000	2CMA180801R1000
ABB Enclosure for public solutions	Depending on application



Products



Miniature Circuit Breakers

- Complete range of MCBs compatible with RCDs
- Rated current: 0,1A to 125A
- Breaking capacity: up to 50kA
- Tripping Curves: B, C, D, K, Z
- Pole variants: 1, 2, 3, 4, 1+N, 3+N
- International standards: IEC, EN, UL, CCC,...
- Huge number of country approvals
- Manifold terminal technologies
- Complete range of accessories
- Suitable for all e-mobility applications



Surge Protective Devices

- Power DIN Rail SPD ranges:
- Type: 1, 2 and 3 OVR T1,2 or 3
- From 7 up to 100kA Iimp
- From 5 up to 70kA Imax
- SPDs up to 690V AC, Isc up to 50kA
- Signaling SPD range: OVR TC
- UL and IEC/EN certifications



Residual Current Devices

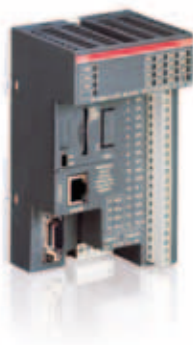
- Complete range of Residual Current Devices compatible with Miniature circuit breakers:
- Rated current: 16A to 125A
- Tripping currents: 0,1 to 1A
- Tripping Types: A (single phase charging), B (3 phase charging)
- Residual current operated circuit-breaker with overcurrent protection (RCBO):
- Rated current: 0.1A to 125A
- Rated voltage: up to 690VAC
- Breaking capacity: up to 50kA

Products



Electricity Meters

- Complete Range of Electricity Meters
- Direct & Transformer connected
- Measures active and reactive energy, harmonics, export / import of energy
- IEC and MID approval
- DIN rail mounting
- LCD display, Pulse output
- IR interface for serial communication
- ODIN, ODINsingle, DELTAplus, DELTAmax, DELTAsingle
- Suitable for monitoring and billing consumed energy in e-mobility charging stations



PLCs and I/O modules

- 2 serial interfaces integrated, RS232/RS485 configurable
- Display and 8 function keys for diagnosis and status
- Centrally expandable with up to 10 expansion modules locally
- Up to 4 external communication modules simultaneously and in any desired combination
- Optional: SD card for data storage and program backup
- Various communication protocols possible
- PLCs can also be used as slave on PROFIBUS DP, CANopen and DeviceNet via FieldBusPlug
- Available with communication processor for Ethernet (PMxxx-ETH)
- Integrated web server functionality
- Onboard I/Os on AC500-eCo CPUs



Plugs and Sockets

- Optimized for their task, not only minimize the risk of short circuits, also ensure maximum personal safety
- All Plugs & Sockets are approved according to IEC 60 309-1,-2.
 - Range from 16 A up to 125 A.
 - IP 44 (splashproof) and IP67 (watertight).
 - All contacts are self cleaning and calibrated, to maintain the accurate contact pressure, quality and performance over time.
 - For some plugs cable entry with compression gland



Enclosures for public solutions

- Our high quality products fits perfect to the demands of the electrical vehicles and the charging infrastructure
- Easy installation
- Installer friendly
- Easy to mount on the street
- Personal safety
- High protection against electric shock
- Robust design
- High quality materials.
- Easy to upgrade for more functionality



Enclosures for wall-mounted solutions

- 4, 12 and 18 modules
- IP65 degree of protection
- IK10 shock resistance
- Insulation class II
- Polycarbonate material GWT 960°C
- Used for many different applications according to the specific version and characteristics; they all make installing modular devices simpler and quicker
- The range consists of flush mounting, wall mounting and panel consumer units
- The models vary according to the degree of protection, the capacity, the types of door
- All versions have many accessories to meet all your requirements so that it is possible to choose the terminal holders and terminals which are most suitable for each e-mobility application



Modular DIN Rail Components

Multiple functions in electrical installations for:

- Measuring
- Analogue/digital measuring instruments, meters, counters, current transformers, electrical energy meters, etc.
- Signal lamps, illuminated push-buttons, alarm indicator, buzzers, bells, etc.

Products



Electronic timers

- Multifunction and single-function versions
- Wide supply voltage range
- Time ranges up to 300h
- International approvals



KNX Intelligent Building Control

A complete product range for automation and control in today's modern buildings in both residential and commercial sectors:

- Security and monitoring
- Energy and load management
- Visualization and operation
- Central automatic
- Remote control / maintenance
- Interfacing to other control systems



Busch- Energy Control

- 3,5" LCD Display over KNX RF
- Displaying energy consumption data and costs
- Real-time Energy consumption and car charging
- Displaying statistics from category meters like gas, water (cold/hot), heat, oil
- Wireless connection with KNX Intelligent Building Control



Pilot devices

- A wide, modular and flexible range
- Easy assembly
- Quick and secure mounting
- High ratings and high degree of protection
- Self cleaning contacts
- Compact range
- Up to IP 67-69k



A-Line block contactors

- A-line, A/AF Block Contactors
- Up to 670 kW
- 3-pole and 4-pole, AC, DC or wide range electronic coils
- Safe and easy to install and maintain
- Perfect fit to most applications
- Coordination with other ABB products
- Complying with standards for building and industry applications
- Contactor for AC-1 application
- AF1250 and AF 2050, also including the whole AF range with its AC-1 ratings
- Ideal for e-mobility applications



Automatic moulded case circuit-breakers Tmax

- Suitable for DC charging applications
- Tmax automatic moulded case CBs are available from 1 A to 800 A in 3 and 4 pole versions, according to the voltage level.
- Tmax MCCBs flexible range can provide complete solutions for protection and isolation inside string boxes or inverter switchboards.
- Three different kind of thermomagnetic trip unit are provided for every application need
- Fixed, plug-in, withdrawable versions
- Remote control available for all the sizes
- Wide range of electrical and mechanical accessories



DC switching block contactors

- Suitable for DC charging applications
- GAF DC switching contactors
- GAF185 thru 2050 at 1000VDC, DC-1 per IEC
- GAF185 & 300 + AF460 thru 2050 at 600VDC, General purpose per cULus.
- Same dimensions as standard A/AF
- Three poles in series
- Permanent magnets

Contacts

www.abb.com/lowvoltage

The data and illustrations are not binding. We reserve the right to modify the contents of this document on the basis of technical development of the products, without prior notice.

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