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SPECIAL ROUTE

Charging technology & network infrastructure

Electromobility is slowly gaining momentum, and according to McKinsey, German manufacturers could become world market leaders in the field of e-mobility from 2021. However, the necessary infrastructure must also be created for this: The interlinking of products and devices is technically much more complex than with the good old gas pump - especially since the electricity grid will be added as a further control component. Developers in the field of e-mobility need to examine this complexity from the component to the system.

Charging infrastructure development and grid integration

The increasing number of electric vehicles poses new challenges for distribution network operators as well as fleet, filling station and charging infrastructure operators. One of the challenges is the planning, implementation and operation of charging infrastructures. The article highlights the prerequisites for an adequate charging infrastructure, considers the load requirements up to the communication between vehicle and network. One aspect is also the growing demand in the field of rapid charging infrastructure with special requirements for the hardware/software and operational needs for charging electric vehicles.

Cables, plugs, wires, control technology

The charging technology and the underlying electromechanics: The different technologies (AC, DC) with one or three phases, with vehicle mounted charger, require a different structure of the charging station/wallbox than for charging with direct current, where the charger is built into the charging device. The control of the charging and the communication is done by a built-in controller and appropriate communication interfaces between the vehicle and the charging station to the mains.

Charging: Norms and standards, electrical safety as well as conformity with calibration law

The charging infrastructure for electromobility is still a new topic for the field of electrical systems: these must be technically safe under the generally accepted rules of technology during installation and operation. In addition to safety, many issues play a role in the application, from charging management to grid load - all issues that also require a high degree of interface compatibility and communication capability of the products used.

News from the fields:

Electromechanics like cables, wires, connectors as well as power semiconductors, measurement technology, development services

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