



**SUSTAINABLE  
CHARGING  
STATIONS**



# SUSTAINABLE CHARGING STATIONS

## Standard USPs/features of ebee charging points or charging points with Bender CC612 charge controller

### General information

ebee charging points are designed for outdoor and indoor use (stainless steel enclosure, protection classes IP54, IK10, forced-ventilated). Different models can be installed as wallboxes on a wall or as free-standing single or double columns by means of the optional stele. The stele can be mounted on suitable solid ground (concrete floors) or on loose soil using the ground anchor supplied.

The structure of the devices is such that they can be maintained and repaired by qualified electricians. Faulty devices should not generally need to be removed and returned to the manufacturer: Fault location and repairs can be carried out on site with standard components.

Data connections to ebee charging points can be established with all commercially available backends (has.to.be, Virta, MS-Solutions, ChargeCloud, Smartlab etc.). In addition, as they use a Bender charge controller, ebee charging points are fully compatible with devices supplied by the manufacturers Garo, Ensto, Smight and Eluminocity/Wirelane and Pion (whose devices are also mutually compatible). The identical dynamic load management should also be noted.

The enclosure colour can be selected according to customer requirements (RAL colour range). The acrylic plates (RFID reader and central viewing window) can also be adapted to individual customer designs.

Regular software updates allow for future standards to be upgraded and amended and for an expansion of the functional range.



### Electrical safety

Residual current monitoring is carried out using an integrated RCD type A and integrated 6 mA DC RCMB residual current measurement in the charge controller. RCD types A and B are not necessary in the sub-distribution system.

Any residual currents can be logged and transmitted so that faulty vehicles or potential problems can be identified more easily.

### Authorisation (ISO 15118)

ebee charging points are plug & charge (ISO 15118) compatible. The application of the ISO 15118 standard for power line communication between the vehicle and the charging station also provides authorisation without an RFID card or APP. This extended communication also allows for the necessary future integration of the vehicle into grid solutions (smart grid).

### Energy management

Thanks to the integrated dynamic load management (DLM), it is possible to integrate up to 250 charging points (via Ethernet & WLAN) into local dynamic load management by means of DLM master/slave communication. Backend load management is also possible via OCPP. Local and open OCPP protocol-based load management can be used in order to equip existing or limited grid connections with several charging points. The charging infrastructure can also be expanded in future with additional charging points without overloading the available connecting wires.

The available power is distributed between a larger number of charging points without any additional hardware being required. This is a dynamic process which depends on vehicle requirements. An external power measurement or energy control device can be easily connected to the ebee charging point. This can be achieved, for example, by means of Modbus TCP.

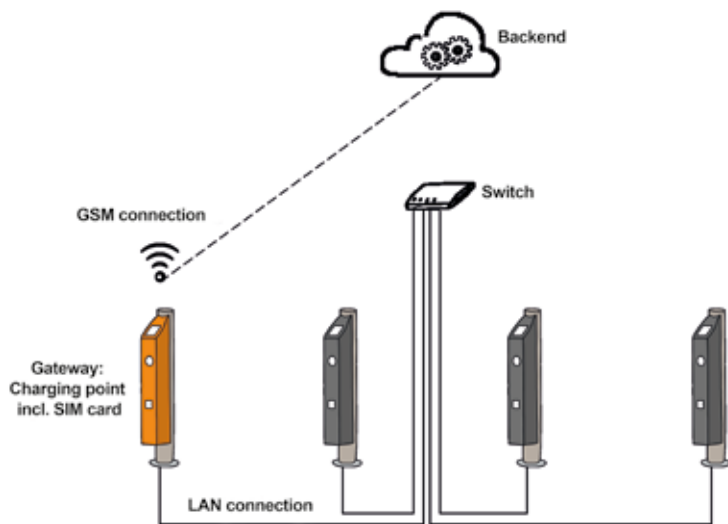


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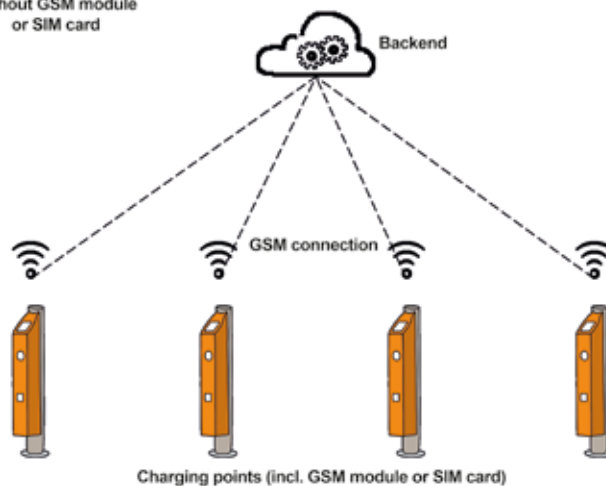
## Communication

ebee charging points can be used and are compatible with all commercially available backend solutions. This is possible thanks to the use of the open OCPP protocol (currently 1.5 and 1.6 Json/Soap).

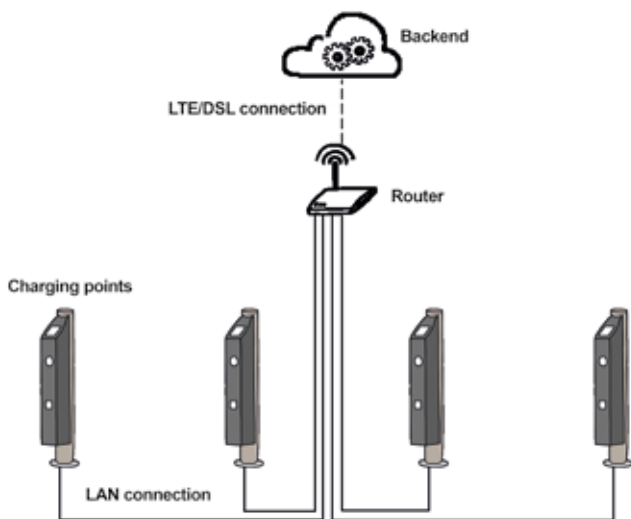
The charging point offers four different communication possibilities and can be connected, individually or in combination with others, to an OCPP backend via WLAN, Ethernet or GSM (3G/4G). These combination possibilities are part of the standard equipment.



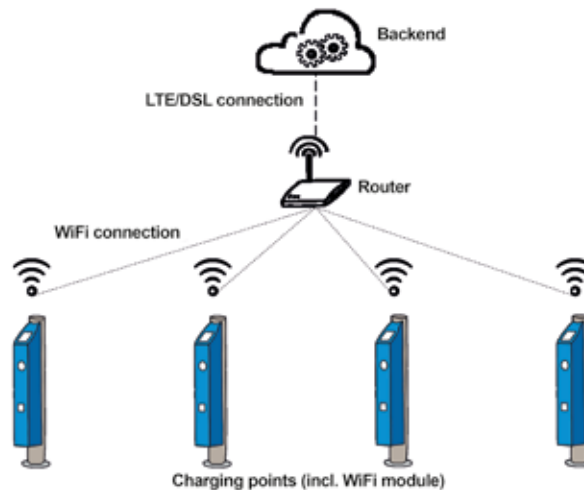
Grouping of charging points and connection to the backend via the gateway function



Each charging point (incl. GSM module or SIM card) has an individual GSM connection to the backend



Each charging point has an individual LAN connection to the backend via a router



Each charging point has an individual WiFi connection to the backend via a router



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## Billing in compliance with German calibration law

Standard ebee charging points are designed in compliance with German calibration law. This is based on the installed certified meters (eHZ mobility) supplied by EMH together with the charge controller (CC612) and the manufacturer-independent transparency software (S.A.F.E Initiative). Energy can therefore be billed via the backend in compliance with German calibration law. Moreover, it is possible not only for end customers but also for operators (CPO) and mobility service providers (EMP) to check the accuracy of the transferred consumption values thanks to the transmitted signatures.

