

# Integrate up to five charging poles in KNX

**With the "SMART CONNECT KNX e-charge II", ise integrates electric mobility into the KNX bus - regardless of the manufacturer of the charging poles.**

How does electromobility enter the smart home? And what do the users want? For ise, these questions were at the beginning of the development of a system for connecting charging poles that enables dynamic load management to be carried out. "This is what smart home technology makes possible in the first place", says Robin Geide from the technical support of ise - individuelle Software und Elektronik GmbH from Oldenburg. Which leads to the answers to the initial questions. This is because smart home residents are used to being able to retrieve data in a clearly structured manner and that the management is done in the background. What matters most to them is convenience - and that the available energy is managed as efficiently as possible.

In order to coordinate energy generation, the producers, such as a PV system (photovoltaic), must communicate with the consumers. The energy manager levels the load peaks so that the PV system supplies the household appliances as directly as possible with green electricity and uses the surplus electricity to charge the battery storage or heat the water in the boiler. The electric vehicles at the charging poles of the Smart Home must also be supplied so that they are charged when used.

However, this is not easy to achieve. One big problem: In many houses and buildings, charging poles from different manufacturers are in use. Because each manufacturer has its own interfaces, system integrators are faced with the challenge of adapting each charging pole to the KNX interface at great expense.

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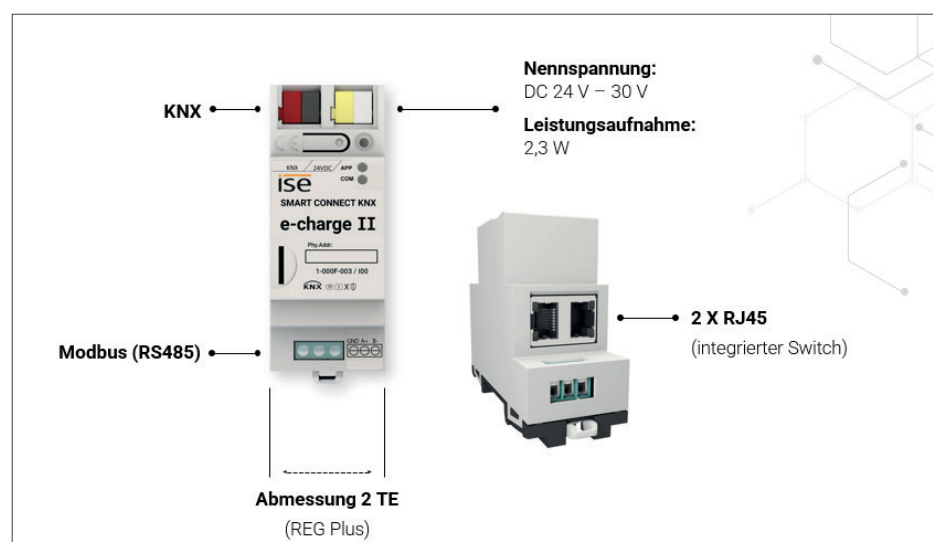
Robin Geide

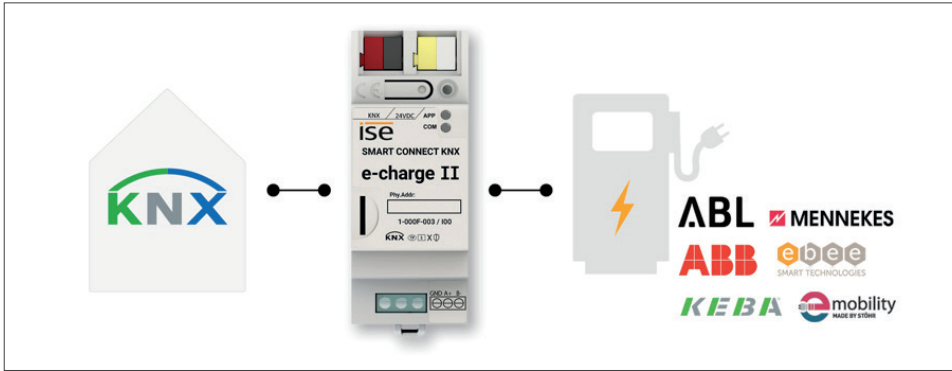
vides the problem solver", says Robin Geide. "We integrate the charging of electric cars into the KNX system with this." With the SMART CONNECT KNX e-charge II, charging stations from various well-known manufacturers, including ABB, ABL, ebee, KEBA, Mennekes or Stöhr, can be conveniently connected to the KNX bus in the same way every time. "We currently support 26 charging poles from 7 manufacturers. With each firmware update, we expand the diversity of manufacturers", says Geide. The system integrator therefore no longer has to deal with the interface of the charging poles. This translates into enormous time savings for the professional, and the end customer benefits from the lower costs.

Up to five charging poles can be controlled and dis-

*The structure of the "SMART CONNECT KNX e-charge II" with Modbus interface and integrated switch*

Source: ise





With the SMART CONNECT KNX e-charge II, ise brings electric mobility into the smart home. The SMART CONNECT KNX e-charge II integrates the charging poles of different manufacturers into KNX. Up to five charging poles per gateway can be controlled.

Source: ise

played in a Smart Home via the “SMART CONNECT KNX e-charge II”. The heart of the system is Dynamic Load Management (DLM). In this way, the charging current can be controlled depending on the general consumption and the charging process can be managed. And in such a way that appliances that are currently needed in the house - the oven, the washing machine at 90° - are not switched off. Charging takes place whenever the need arises - several charging poles can be operated in parallel, even from different manufacturers, which is a great advantage for use in businesses or hotels. “Because this allows peaks to be flattened, the maximum grid load is not exceeded. Another big advantage is that no major grid connection is necessary, which would be associated with high costs”, explains Geide.

Another advantage is the prioritisation of charging poles. The car that needs to be loaded quickly gets the maximum attention. The car that is not needed until the next morning can be charged overnight in a relaxed manner. This requires the actual power or the actual current as values for the KNX bus. This means that it does not work without smart meters. If an EHZ (electronic household meter) with an optical interface is available in the home, an optical reading head from Lingg + Janke, for example, can be used to obtain the required values.

An example: A hotel has five charging poles, one of which is reserved for the in-house chauffeur, while the remaining four are offered to guests. Because the chauffeur has to be constantly available, this charging point is prioritised and the car is always ready for use.

Various visualisation options are available, depending on which the client prefers. ise moves exclusively on the KNX

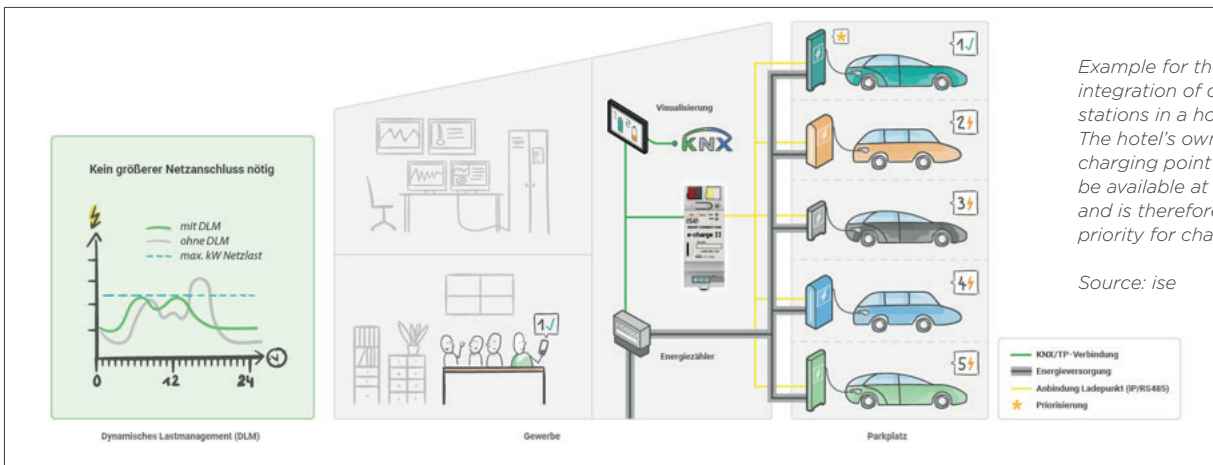
bus on the basis of communication objects. The customer can now choose his preferred display option completely freely and independently of the manufacturer: With one click, they have access to all charging poles from different manufacturers.

Via SMART CONNECT KNX Remote Access, the ise gateway for secure remote access and remote maintenance, the user can determine whether the car is charged and ready to drive. The user can be notified conveniently about the charging status via the notification function, eliminating the need for time-consuming repeated checks. And all this without having to use third-party Connect services!

The entire commissioning process is carried out in the ETS software, the manufacturer-independent configuration software for planning and configuring intelligent home and building system technology with the KNX system. This means that group addresses, third-party software or tools do not have to be entered manually. Commissioning is always done in the same way, regardless of the charging point from any given manufacturer that needs to be connected.

The SMART CONNECT KNX e-charge II contains an integrated Modbus interface (RS485). An additional adapter for the charging point is no longer required, which saves space in the distribution and eliminates sources of error. The integrated switch saves several network lines in the distribution.

“We developed the SMART CONNECT KNX e-charge II with both ease of installation and ease of use in mind. Now we’re ready to really take off”, says Robin G



Example for the integration of charging stations in a hotel: The hotel's own car at charging point 1 must be available at all times and is therefore given priority for charging.

Source: ise