# Interdisciplinary energy management

***Energy management is now coming into the spotlight, as Klaus Ott of Lingg & Janke observes. The company offers, in addition to other products, KNX-enabled smart meter products for electricity, gas, water, heating and cooling.***

KNX smart meters are not really a new topic for Klaus Ott, product manager at Lingg & Janke. The product range of Lingg & Janke already covers a broad spectrum of applications: from the measurement of electricity to gas, water, heat and cold. Lingg & Janke made the first electricity meters KNX-compatible as early as 2006. Then heat and water meters were added, and in 2008 the first gas meters. "So we have been able to gather a wealth of experience over a number of years", says Klaus Ott happily.
"Now energy management is clearly coming into the spotlight. We are already looking forward to the projects that will come from this field."
So what does smart energy management need? To start with, sensors that send the respective values as group addresses directly to the KNX bus. "With us, this happens without detours, without a gateway, without external administration", explains Ott.
The electricity meters that grid operators install today in new installations or when replacing meters are of the EHZ, 3HZ or basic meter types from various manufacturers. How do the values from these meters get onto the KNX bus? The meters mentioned all have an optical interface - also called D0 interface. Each user receives a PIN from his network operator on request to unlock the performance values or an extended data set. For this optical interface,

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Lingg & Janke has a KNX connection with optical head in its portfolio. "Via the optical head, we can receive the push messages that the meter sends", Ott explains. "With this, we automatically get the values that the meter sends delivered to the KNX bus." Regardless of whether these are meters, for example from EMH, Iskra, Hager, EBZ or Easymeter, or industrial meters, e.g. from Apator. This is


*Example of meters as installed by grid operators in classic grid operation. They all have optical interfaces. Lingg & Janke has developed an optical head to receive the push messages from the meters and bring them onto the KNX bus.*

the easiest and quickest way to get the energy values for smart energy management from the utility meters.
It is similar for heat counters. They also have either a KNX interface located in the housing of the meter or an external KNX interface connected via cable. But there are also cases where the values that are needed are recorded via a meter connected downstream of a supply meter. In addition to the energy and performance values, data that the heat meter records for its calculation of energy consumption, such as flow temperature, return temperature and flow rate, are also transmitted to the KNX, directly, i.e. without a gateway.
Water meters also have either an internal or an external interface. And here, too, the values recorded by the meter are transferred one-to-one to the KNX.
For gas meters, there are two major manufacturers that dominate the market. Lingg & Janke also provides KNX interfaces for these meters. The meter reading is transmitted to the interface in cubic metres or litres via an encoder counter. From here, the values go directly to the KNX bus without detours. In this way, smart energy management can be implemented directly.
What plays a major role in all of Lingg & Janke's developments: "We want to make it as easy as possible for users and offer complete plug-and-play systems", Ott explains. Therefore, all products in this range have rotary coding switches. They sit on the circuit boards in the units. The user can use this programming system, called KNX quick, to easily use the pre-assembled group addresses defined by Lingg & Janke for the respective application without ETS programming. After setting the rotary coding switches, the user only has to press the programming button and the counter automatically sends its values to the bus. The rotary dials thus make it easy to enter group addresses, which allows easy connection to KNX and simple commissioning of the units. Small meter systems, up to 135 units, can be put into operation in a simple way, so that energy management can also be implemented across different trades. A visualisation can then easily take over the predefined group addresses. This means that the installation effort is very low - simply plug-and-play. Of course, all meters can also be parameterised with the ETS and connected to all KNX products.
By the way: All meters that Lingg & Janke has in its portfolio are calibrated and have MID approval, i.e. the meters can be used for billing purposes.


*The optical head reads the data from the meter and transmits it to the KNX bus, as indicated by the red illuminated LED at the top left.*