

# HONEYWELL SUPPLIES THE NEXT GENERATION OF SMART GAS METERS FOR THE LUXEMBOURG MARKET

Pioneering a smart metering roll-out in Europe

Case Study

Honeywell Smart Energy was selected to supply gas meters with Absolute ENCODER (AE) index technology to meet Luxembourg meter laws.

## SOLUTION

To deliver on a smart metering solution Honeywell Smart Energy's project team carried out detailed product development, extensive testing and a high-quality production environment. The technology selected for the Luxmetering project was Honeywell's Absolute ENCODER AE5 generation which has been able to demonstrate its mass suitability. The Absolute ENCODER is an index for diaphragm gas meters which records and displays gas consumption in exactly the same way as a mechanical roller index. The position of the index rollers is scanned opto-electronically and the absolute meter reading is transmitted via an interface and regulated communications protocols. Bidirectional communication, Mode 7 encryption and remote firmware updates were also specially developed by Honeywell for the Luxmetering project to supplement the OMS 4.0.2 standard specifications. These solutions were a prerequisite for successfully satisfying the requirements for data security, service life, cost efficiency, traceability, and reliable lead times for the devices.

After the Honeywell gas meters passed the Luxmetering type examinations, they went into series production. The delivery of G4, G6, G16, G25 and G40 gas meters (with Absolute ENCODER index AE5) to the Luxembourg gas grid operators marked the start of the large-scale roll-out. The original roll-out phase was expected until end of 2020, but due to COVID it was extended to 2022.

## NEEDS

The decision to install smart meters in Luxembourg is based on a law from August 2015. This law is, in turn based on the European Directive on Energy Efficiency (2012/27/EU) and an amendment to the Electricity and Gas Market Regulations enacted in 2012.

The Luxembourg grid operators prepared joint specifications between 2012-13 and set up a consortium in 2014 to supply a common, national smart meter platform. This was operated by the economic interest group (Groupement d'intérêt économique, GIE) Luxmetering.

## ABOUT LUXMETERING

Luxmetering is an economic interest group which was founded in 2012 and comprises of all gas and electricity grid operators in Luxembourg. The company was set up to develop and operate the national smart meter platform for Luxembourg and to coordinate the smart meter roll-out. Together with the grid operators, Luxmetering is responsible for the introduction of more than 500,000 smart meters.

"Honeywell's smart gas meter has supported the introduction of smart metering in Luxembourg."

— PAUL HOFFMANN, MANAGER OF LUXMETERING

**Honeywell**



The Luxembourg grid operators decided to use the Open Metering System (OMS) 4.0.2 protocol as a basis for the Luxmetering specification to communicate between gas and electricity meters. These meters communicate with each other using either the wireless M-Bus (868 MHz) or wired M-Bus. Both comply with OMS 4.0.2 and are based on EN 13757. The electricity meter communicates via Power Line Communication (PLC) with a data concentrator which transfers the data using 2G/3G/4G GPRS/LTE to the head-end system (HES). It can also communicate directly with the HES using 2G/4G. The main requirements for the communication interface between gas and electricity meters were robust bidirectional communication, Mode 7 encryption and remote firmware updates.

## BENEFITS

The Absolute ENCODER AE5 from Honeywell Smart Energy is a high-performing index which optoelectronically scans all eight rollers.

- It is suitable for universal use, customer, project, or country-specific requirements.

### For more information

<https://pmt.honeywell.com/us/en/businesses/smart-energy>

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- It can be implemented efficiently in the communication module (with short development times and low costs for obtaining the required approvals).
- It scans all eight rollers, making the resolution 10 times higher than its predecessor, the AE3.
- The use of eight rollers also means that, for example in Germany, BK-G10/G16 and BK-G100 can also be connected to a peak-load display device (HBA).
- It operates with a reduced supply voltage of just 3.3 V so conventional batteries without transformers can be used if wireless modules are fitted. This increases overall service life and reduces costs.
- Security measures ensure the integrity, confidentiality and authenticity of data exchange between various communication partners.
- The smart gas meter with the Absolute ENCODER AE5 offers end-point energy consumers near real-time information on energy consumption, which allows them to reduce their energy use and significantly decrease costs.
- All devices are equipped with TC (temperature compensation) across all meter sizes.



Diaphragm Gas Meter BK-G4 with Absolute ENCODER Index AE5 and Wired M-Bus Communication Module



Absolute ENCODER Index AE5

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