

The domestic diaphragm gas meter in the field of smart metering: Modularity – looking forward today to the future tomorrow

There is a lot going on in the energy sector: in many countries, the deregulation of metrology as well as legal aspects have given rise to numerous requirements in respect of the acquisition and transmission of data, and these now have to be implemented.

This is just where smart metering comes in, with all of the new challenges it represents. Apart from the opportunity it offers for simplifying processes and making an environmentally significant contribution towards reducing the level of CO₂ emissions, in the first instance it represents an element of some uncertainty and risk. Quite simply, there is a lack of the required experience, for example, in dealing with the anticipated volumes of data and information, handling and installing meters with enhanced functionalities and – as a point of particular importance – in terms of the performance and safety of wireless solutions and the associated installed service life.

With smart metering, meter manufacturers are forced to convert existing and future requirements into real products and – as a basic requirement – to guarantee that products are future-proof.

In terms of diaphragm gas meters, future proofing means more than just reaching the first calibration period after eight years. The significant feature of a diaphragm gas meter, apart from measurement accuracy, reliability and robustness, is an extremely long service life making it completely possible for a meter to be retained in place in the network for more than 20 years. In the implementation of smart metering, this proven technology



Be at the cutting edge in every situation! Smart metering – the modular encoder concept offering versatile facilities and functions

encounters wireless technologies with a very short installed service life, and subject to a constant process of innovation. To ensure that the positive features of the diaphragm gas meter are retained in the field of smart metering as well, with its modular encoder concept Elster GmbH has made it possible to combine the wide variety of requirements imposed on the smart meter with the tried-and-tested measuring principle of the diaphragm gas meter. With the modular encoder concept, use is made of various communication modules which can be selected as required. The basis for this concept is provided by the Absolute ENCODER index – a combination of mechanical and electronic index – which transmits absolute meter readings.

The encoder index operates without a battery. The power required for the purposes of reading out only is provided from a source external to the index, drawn from the downstream communication module in each case. This means that the part of the meter of relevance in terms of calibration technology remains unaffected. Depending on the installation situation, the encoder index can be equipped with a cable-based M-Bus module or a corresponding radio module. In practice, this flexibility will turn out to be extremely advantageous, as in many cases before he reaches the building the fitter does not know what installation situation he will be faced with. In addition, the concept also supports the replacement or switching of

the radio module in a simple operation. This replacement can be carried out without any parameter setting, with the new radio module plugged into the communication interface on the Absolute ENCODER and lead-sealed into the meter housing. The modular encoder concept supports M-Bus (cable-based and wireless) communication and also offers the possibility of making use of repeaters to amplify the radio signal. In order to guarantee compatibility with devices such as data concentrators and electricity meters, use can be made of a dongle which can be connected to the cable-based M-Bus interface on an electricity meter to act as a radio transceiver.

It is specifically the outlay and the associated installation costs which are frequently underestimated. If the costs of an installation are calculated at 1 euro per minute, when it comes to a full-coverage smart



Compatible radio module for gas meters

meter roll-out, what was initially assumed to be a favourable purchase price can rapidly turn out to be an expensive and commercially unviable solution. When consideration is given to the “total cost of ownership”, the modularity of the encoder

concept makes a clear-cut contribution towards reducing overall operating costs and also offers security of investment, with a view to the future.