

Advanced interface concept:

Electronic index for diaphragm gas meters

In the future we will be giving regular reports on the features, functions and also possibilities which our new electronic index offers. Changes to paradigms require time, as already mentioned in the Editorial. We have taken this statement to heart and even though the new index will not be ready for serial production until the third quarter of 2010, we would like to make you familiar with the unit in advance.

Here, we will go into detail on important topics, such as conformity assessment, calibration, installation and servicing, and offer advanced training measures in this connection as part of our training programme. As you will see, the new index offers great possibilities for facing the requirements of the future. New possibilities create new challenges. These are without doubt, when compared with the conventional mechanical index, the new operating options using menu buttons and dealing with the new menu structures.

As a result of recent events, we begin on this key issue with a contribution to the subject of communication. Thanks to an intelligent interface concept in the unit, you can face the future completely serenely – even despite controversial discussions about standardizing communication protocols.

An interface is like a railway track. The trains that use them may change their shape, colour and features but the track width remains the same, even across borders. That's enough theory.



Universal Metering Interface (UMI) – investment security thanks to intelligent interface concepts

Thanks to modern search engines, it is easy to find the precise scientific definition for a term. The term interface is defined as follows: part of a system which is designed for communication.

So, with this we would already have landed on the subject in question: communication. Without communication that is based on absolute and thereby reliable meter readings, there is no smart metering, and without communication, no

smart grid. If we consider the complete value chain of a smart remote reading system, we would see communication as the Achilles' heel of the entire system. Too little experience with regard to long-term stability, uncertain performance in mass applications and open questions concerning battery life put a strain on the willingness to make decisions.

With the development of a new and innovative electronic index for diaphragm meters, Elster GmbH has also implemented another interface concept which addresses uncertainties relating to communication. This interface concept is known as Universal

Metering Interface (UMI), and has been developed by Cambridge Consultants, a high-profile British development company. The aim is to establish UMI as a standard interface. In the meantime, leading companies in the communications sector and the appliance industry have already announced that they will be developing and implementing communication modules in accordance with the open UMI specifications. Members already include AMiHO, AND Technology Research, Cambridge Consultants, CODEL, DIGI, Elster, INSYS, Plogg Wireless Energy Management, Remote Energy Monitoring, Renesas, Simple Solutions UK, SiTel and Telegesis.

Moreover, UMI has the flexibility to retrofit new communication technologies at a later date. This may be the case, for example, when standardization activities have been concluded and a mutual agreement has been reached on the communication



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data objects, such as cumulative volume, time and historical values, can be converted into the required objects pursuant to industrial standards such as DLMS/COSEM, ANSI, M-Bus or ZigBee Smart Energy.

With regard to the development of the new electronic index, strict separation of metrology and communication had the highest priority. Changes to the metrology relevant part of the firmware of a meter during operation are not permitted and would involve a new approval. With UMI, however, changes or a subsequent installation or replacement of communication modules can be made without this influencing the metrological features. Communication and communication protocols are short-lived and will change. This makes the ability to react quickly and update the firmware and hardware all the more important. This also allows for security considerations, which require a firmware or hardware update, e.g., following a hacker attack on network components.

The UMI specification is already available and defines the interface completely on a mechanical, electrical and even on a protocol level.

Elster rounds off the product portfolio for meters with innovative index technologies with the introduction of the electronic index for diaphragm gas meters and the UMI interface. Elster's Absolute ENCODER index already uses an interface concept that offers the greatest flexibility for current as well as for future communication technologies. The communication modules of the already well-placed Absolute ENCODER, in terms of market success, also offer the possibility of using UMI technology in the future. Other developments from Elster, such as in the field of data loggers and volume correctors, will also take the UMI interface concept into consideration.

If you would like to find out more about the Universal Metering Interface (UMI), you can either go to www.CambridgeConsultants.com/umi or simply talk directly to us.

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The UMI interface concept is by no means limited to use with gas meters, in fact, quite the reverse. A great advantage is the uniform form of the UMI communication modules. They may be universally implemented in measuring instruments for electricity, gas, water and heat meters, as well as in data concentrators, in-home displays and other units. The uniform form also opens up the market for alternative communication technology suppliers, accelerates development, increases product quality by mass production and reduces costs relating to the end product. A certifying body shall ensure that units satisfy the requirements of the UMI standard.

standard to be used. This will lower the risk of bad investments and the roll-out of smart metering can begin much earlier, irrespective of the communication standard.

UMI communication modules can be designed for long-distance (GPRS, SMS), short-distance wireless (ZigBee, Wireless M-Bus, Z-Wave, Wavenis, Bluetooth, WiFi), cable-based (M-Bus, KNX) and PLC communication. In the UMI module, relevant