

# Profiles

Customer Magazine 3/2016



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New: Shut Off Valve HON750

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The Olympic Torch – The Show Must Go On!

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Flow Computer enCore FC1

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Honeywell MasterLink Software Solution

# Carrying the Torch



*Andy D'Amelio,  
VP, Honeywell Process  
Measurement and Control*

As you read these lines, the year 2016 is coming to an end – and it once again has been a landmark year for change and challenges, both on a geopolitical and economic scale. From the embargos on Russia to the lifting of sanctions on Iran, from BREXIT to the failed coup in Turkey, from the US election to the ratification of the Paris climate treaty – many of these changes will have an impact on our industry for years to come.

And it has been a year of changes for Honeywell as well. We integrated the ELSTER Group into the Honeywell family – making Honeywell the number one player in gas instrumentation in the world. Sadly, EU regulations required us to let go of the metering activities from RMG Messtechnik – a process that will continue until January of 2017. We introduced many new and existing products onto the market, from our market redefining ControlEdge PLC solution through the new TwinSonic custody transfer ultrasonic meter to the new enCore ZM1 flow computer. And we are going to continue to innovate, pushing the envelope of what is possible, even in times when the industry as a whole is not growing the way it has been growing in the past.

In July of this year, I took over as VP of Honeywell Process Measurement and Control – incidentally at the same time the cover story of this Profiles magazine was happening. Honeywell technology was used to power the Olympic

flame in Rio de Janeiro – a real honor for us at Honeywell and a once-in-a-lifetime opportunity to really shine on a global scale.

Let me finish this editorial with some thoughts about our industry: We are a very conservative bunch of people. New technologies are first seen as a potential threat and disruption, not as a potential source of improvement and advancement. Investment cycles are often decades long – squarely at odds with the faster and faster spinning new technology wheel driven by a workforce of millennials and game changing trends like the IIoT.

We at Honeywell have made it our mission to help you bridge this gap, to help you understand not only what new features we bring to you, but how they positively impact your business. So do not be surprised if your friendly Honeywell sales guy does not ask you what you need in the next meeting, but rather is interested in why you need it – because only if we understand the impact for your company can we help you select the best technology for the job.

After all, the very definition of being conservative or traditional is passing on the flame, not preserving the ashes.

With best wishes,  
Andy D'Amelio

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## New Product Highlight:

# Shut Off Valve HON750

In addition to a number of new gas pressure regulating products for the gas distribution industry, Honeywell has now also launched a new product in its OEM Division. The new HON750 shut off valve rounds off what is already a wide range of products for the gas engine industry.

The use of natural gas or LNG as a fuel to generate energy makes for a permanent reduction in CO<sub>2</sub> and nitric oxides in internal combustion engines and therefore ensures even greener combustion processes. This is used in combustion gas engine power plants. Other gases such as sewage gas, mine gas, biogas, propane, butane and LCV gases can also be used for these machines, however. This means that it is also possible to save primary energy sources through their use. Fuel gases for use in these engines first undergo a gas assessment. On the basis of their methane number, it is possible to establish which additives are required to make a gas which contains methane suitable as a fuel for a gas engine. It is not just the methane number which is decisive in providing the correct fuel mixture for the gas engine, however, as the pressure and flow rate of the fuel gas are also very important.

Therefore, the gas control section upstream of every gas engine is used, on the one hand, to ensure the perfect gas pressure and, on the other, to satisfy all the safety requirements. Essentially, a gas control section comprises the following components (Fig. 1): ① Manual ball valve, ② gas filter, ③ flow meter, ④ gas pressure regulator, ⑤ pressure sensors and indicators, ⑥ shut off valve combination HON750.

This shut off valve combination interrupts the gas supply to the engine if the engine control unit so requires. It is also necessary to close the gas supply safely within a certain time in the event of danger. The shut off valve HON750 ensures that this is done.

As with all new developments, the customer benefit as compared to existing solutions is our primary concern. What are the product

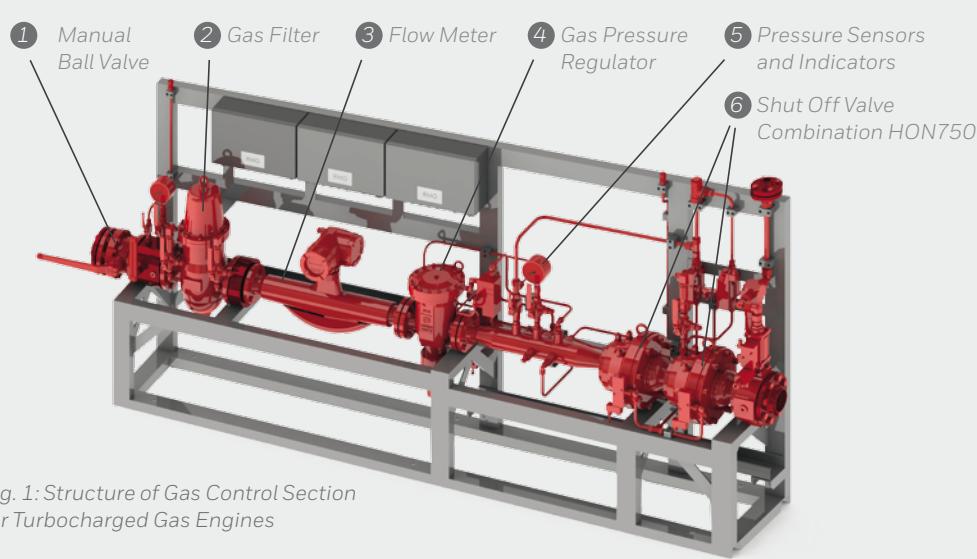


Fig. 1: Structure of Gas Control Section for Turbocharged Gas Engines

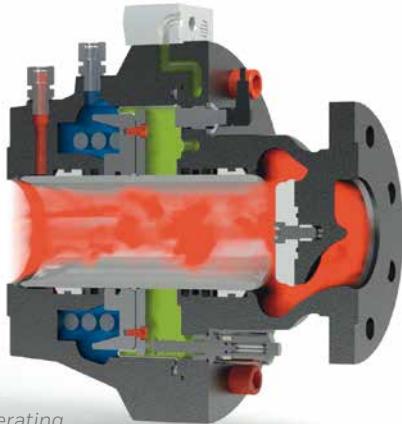


Fig. 3: Operating Principle of the HON750

## Main Features of the HON750

Nominal size	DN 25, 50, 80
Flow coefficient in m <sup>3</sup> (h·bar)	550, 2200, 5600
Max. operating pressure	40 bar
Control	Compressed air up to 8 bar
Design	Axial, fail-close
Position indicator	Inductive limit switches and visual indicator

[Link to Function Animation](#)



[www.honkassel.de/  
hon750](http://www.honkassel.de/hon750)

properties which enable the operator to improve processes, reduce purchase costs but also minimize operating expenses.

The shut off valve HON750 was developed on the basis of this guideline. From a technical point of view, it is able to replace electro-pneumatic valves which are used as safety devices in control sections for gas engines. It delivers a whole host of benefits as a result of its design. Unlike conventional electro-pneumatic solenoid valves, the gas flow is not diverted in the housing but passes through the housing in a straight line which reduces pressure loss and

increases the flow rate. As a result of this higher flow rate, it is possible to reduce the nominal size of the complete system which results in a significant reduction in cost and also reduced space requirement. This benefit is particularly felt in maritime applications since every cubic meter of additional space is valuable. The compact design of the HON750 also means that a space-saving enclosure for the complete control section can be used so that the potentially explosive atmosphere around the control section can be restricted and additional space gained (Fig. 2).

The essentially perfect weight distribution of the device around the center of the pipe axis reduces its susceptibility to vibrations and oscillations and thus increases the reliability and safety of the entire system (Fig. 3).

The shut off valve is actuated by a 3/2-way valve which closes the stainless steel sleeve in less than 0.5 seconds using a diaphragm actuator. It holds all the necessary land and maritime approvals under DNV GL, ABS, BV and LR as well as a SIL 3 and PED approval.

Endurance tests in both internal and external test laboratories and field tests with one of the largest gas engine manufacturers in the world have confirmed the benefits of our products compared to conventional safety valves and certified both the high level of reliability and long service life of the valves.



Fig. 2: Shut Off Valves HON750  
in Ship Control Section in a Gas-tight Enclosure

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# Cloud Link 4G Modem

The natural gas industry presents complex challenges. Companies must find ways to operate more safely, make better decisions, and act more quickly by delivering crucial asset data from operations to enterprise in a more efficient manner.

The specific demands on gas utilities include:

- Higher operating costs impacting business performance and profits
- Increased risk to assets posing threats to operational reliability and uptime
- Time-consuming data collection making it difficult to determine asset health
- Technology obsolescence limiting efficiency and productivity improvements



Gas operators require the tools and know-how to effectively store, transport, and deliver gas to meet the rising demand. Gas metering data must be collected more frequently and in smaller increments. The trend towards smart metering has demonstrated the importance of meter data management (MDM) in realizing the full potential of advanced metering infrastructure (AMI).

The cellular modem is a key element of this value chain. Honeywell has just introduced the Cloud Link 4G modem, a new wireless cellular communication interface specifically designed for battery-operated and outdoor applications in hazardous locations.

The Cloud Link 4G modem is fully integrated with the EC 350 volume corrector and the MiWireless platform, it is entirely field-programmable and simple to use through its short-range wireless communication or serial interfaces and its associated set of programming software.

## Easy to Configure

The Cloud Link 4G modem can be configured through the innovative MasterLink app (avail-

able on Android and iOS platforms) or PC software. The configuration can be done completely wirelessly either using its short-range Bluetooth Low Energy (BLE) interface or over the cellular wireless network. The RS232/485 communication port can also be used for the configuration. When connecting to the modem, the MasterLink app performs diagnostics and displays the information on the cellular network. The app can also be used to conduct a site survey to ensure that the cellular coverage at the location is suitable for the modem. The site survey can be stored, baselined, and then used later to troubleshoot communication issues.

## Low Power

Most applications encountered in the gas distribution space are battery-operated. Power can be generated from solar panels or simply be supplied by batteries. To provide the longest battery life possible, the CloudLink 4G modem was designed with this issue in mind, and as a result is able to deliver a 5-year battery life on a single lithium D cell battery.

## Hazardous Locations

Safety of the applications is a concern for all gas distribution companies and being able to install products that support this need is critical. To ensure simple installation, the Cloud Link 4G modem was designed to meet the most stringent Class 1 Div 2 and even Class 1 Div 1 requirements. With the right choice of instrumentation, software, and the supporting ecosystem, utilities supplying natural gas can minimize their downtime, generate more return on installed assets, leverage current industry trends, and prepare their operations for a challenging future. The CloudLink 4G modem is a key element of this value chain.

# JP Srbijagas Benefits from EK280 Offer

The Serbian natural gas company JP Srbijagas is undergoing an unbundling procedure according to the European Union's Third Energy Package with the aim of effectively opening up the Serbian natural gas market.

In order to fully complete the unbundling process, Srbijagas has had to purchase new electronic volume converters with communication interfaces which will be installed on main metering and regulating stations – stations where the transition between the transportation and distribution divisions of the company is made. This kind of volume converter is also necessary for industrial customers who are connected directly to the transportation network, and in Serbia there are quite a few of them.

Honeywell's channel partner Konvex - gasna i vodo tehnika d.o.o. from Belgrade has been distributing gas metering products, both for Honeywell HPS and E&ES, exclusively in Serbia

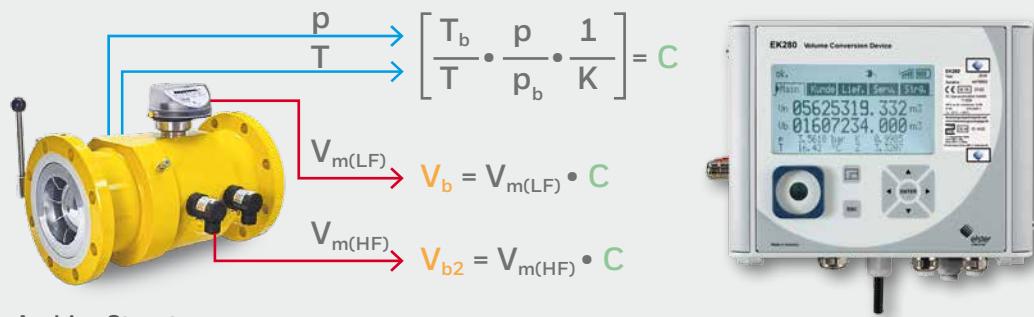
and Montenegro since 1994. The company operates an accredited test rig for residential gas and water meters and cooperates with various local partners in order to meet the customers' high expectations. Konvex recently won an EK280 project and delivered 210 devices. These devices were later integrated into a metering platform which was delivered by a local software development company.

Communication between the MDM software and gas stations is established via an Elster FE260 power supply and function extension unit with Ethernet board connected to the industrial 3G modem which uses SIM cards from customers' private APNs (Fig. 1).



Fig. 1: EK280 in Station Operated by Srbijagas

*Fig. 2:  $V_b$  Calculation Based on a Second Source*



#### Archive Structure

Number	Date	Time	$V_b$	$V_{m(LF)}$	$V_{b2*}$	$V_{m(HF)}$	p	T	C	K	Event	Checksum
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\*  $V_{b2}$  is to be used for recalculation by the MDM system in case of a power or pulser failure (not metrologically approved)

#### Request for redundancy conversion

Industrial natural gas consumers with high consumption rates are very important for every gas distribution and/or transportation company. JP Srbijagas mainly uses Elster turbine meters in these gas stations which are equipped both with LF and HF pulsers in order to ensure measuring data can still be recorded during possible power failures or failures of the turbine meter pulsers.

For this purpose and for the purpose of redundancy in measurement data, JP Srbijagas requested that an additional function be implemented in the EK280. This function is based on the simultaneous registration of both LF and HF signals from a single meter and a device archive structure update in order to store all the values in the local device archive and enable their transfer via the Modbus protocol. The request also involved volume conversion using both the LF and HF signals. This would ensure that the customer always has access to measurement results from the EK280, even if there is a power or pulser failure. This kind of technical function eliminates the possibility of disputes with gas consumers when it comes to the calculation of gas consumption based on historical data which is inevitable if the system operator has no valid measurement results due to any kind of error in the input signals (Fig. 2).

This additional, non-metrological function was developed in close cooperation with the Honeywell Elster Application team and was successfully implemented in the EK280 volume conversion device by the R&D team. Both teams are located in Mainz-Kastel in Germany.

In the meantime, the distribution division of JP Srbijagas was also in need of new-generation volume converters to enable them to operate in compliance with new energy legislation and other related by-laws. Since many stations on the gas distribution network are without a power supply, JP Srbijagas needed an EVC which would fulfil their needs for data transmission and accurate measurement while at the same time providing a future-proof device which could be upgraded with power supply units at a later stage. Taking the above into account, after a testing period, JP Srbijagas identified the EK280 with internal GSM/GPRS communication module as the right solution for their current needs. Thanks to its flexible archive structure and the ease with which communications features can be configured, it will be easy to integrate the EK280 into JP Srbijagas's distribution MDM software which is currently still undergoing development. JP Srbijagas now uses a total of 418 EK280 volume conversion devices in their natural gas distribution and transportation network.

This project shows how our Honeywell channel partner and we as the manufacturer cooperate intensively in order to meet our customers' expectations on a long-term basis. So, let us know how we can support you!

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# Making a Virtue out of Necessity!

As a manufacturer of measuring equipment, we strive to develop products which are a secure investment. A major aspect of this is a long service life and this includes the availability of retrofit and spare parts. Ensuring this over multiple calibration periods does not generally pose a problem for mechanical gas meters.

For electronic volume converters, the situation is a little more difficult and for a communication module which uses the cellular network, this is now virtually impossible.

As a result of the rapid development of new technologies, the life cycle of electronic telecommunication components is becoming shorter and shorter. This trend is now also affecting our current GSM/GPRS modules ECM-GW-120 (**Elster Communication Module**) for our volume converters and data loggers. The 2G<sup>1</sup> network modem chip used in them has been discontinued. We have acted quickly and started a new development in good time. In addition, we have made a virtue out of necessity.

The new modem module series ECM not only supports the 2G network, i.e. GPRS (module version ECM-2G), but also the 3G network (module version ECM-3G) – in other words UMTS. Many of you will now be asking: What about 4G – in other words LTE? Don't worry, we've thought of that as well. Another version will ensure that we are ready for 4G networks in the future. It goes without saying that the modules can be interchanged.

We have also already thought about "SIM on Chip" (eSIM), in other words a technology which will mean that, in the future, a SIM card will not be required to use a cellular modem. The required provider information for this technology is saved directly on a chip.

The launch of the new modem modules<sup>2</sup> and the adjustments required for this in the firmware will also simplify the selection of the application. PUSH (application ComFTP) or PULL (application ComTCPServ) is no longer relevant for ordering the modem. Why? Simply because the application is now covered by the device and is also configured in it.

Thanks to the new modem modules in the ECM series, the existing measuring equipment can be used for a long time and adjusted to new communication requirements. This ensures a long service life for volume converter EK280 and data logger DL230. Investment security made by Honeywell.

New Modem Module  
ECM-3G in the  
EK280



1 2G, 3G and 4G stand for the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> generation of cellular network standards. General information on cellular network standards can be found at [https://en.wikipedia.org/wiki/Template:Cellular\\_network\\_standards](https://en.wikipedia.org/wiki/Template:Cellular_network_standards)

2 The existing modem module ECM-GW-120 will be available until further notice for installed DL210, DL240 and EK260 devices.

# Now or Never!

The GSM/GPRS module ECM-GW-120, which is used in conjunction with EK260, DL240 and DL210 for remote reading using IP technology, has been discontinued. The modems, which will now only be available for retrofitting and upgrading existing devices, will still be available for around one year.

We will be delighted to advise you what is possible with existing technology and at what cost meters in RLM stations can be upgraded. Since there are various ways of connecting to the ALL-IP infrastructure (for example GPRS, Ethernet, DSL) and different transmission principles (PUSH or PULL) are possible, Honeywell can only provide concrete recommendations when we are familiar with your actual situation and technical requirements.

This clarification must be carried out in advance by the metering point operator. From a financial

point of view, however, consideration should always be given to how old the technology is and whether calibration or other maintenance work is due at the stations. Often, this action can be coordinated with other work.

A technical inventory of the existing measuring and communication technology will provide a good basis for us to provide advice.

Conversion of existing devices to IP technology:  
If not now – when?

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# Update on Functionality: More Value – Same Price!

In recent years, the enCore FC1 has been introduced onto several markets around the world. With a Chinese user interface and integrated barriers, for example, the FC1 already has a unique set of features. In order to meet flow computer requirements worldwide, we are continuously working on the firmware and enSuite configuration software to satisfy you, our customers.

There are several areas with new and updated functions. All functions are available with new firmware updates and can be loaded in all existing devices. Firmware and configuration software are available on our website.

## The updates are listed below, categorized by functionality:

### enSuite:

Configuration files can be printed out on printer or as pdf! **UPDATE**

### AFB Printer **UPDATE**

- Network printer connectable via PCL5/6 or Esc/P2
- TCP/IP connection to printers, e.g. LaserJet, is now possible. Serial connection is also supported.
- Printer pages can be designed with enSuite (Fig. 1)

No special knowledge is needed to design printer pages according to customer specifications. All internal values can be printed out at different time triggers or external triggers. Archive tables can also be printed out. Users have a variety of different design options to customize the printer pages as needed.

### AFB Station **UPDATE**

- PID controllers Up to 5 internal PID controllers, freely configurable for regulation valve controls, and much more
- Turbine lubrication 3 different turbine lubrication software modules can be created to control the Honeywell turbine lubrication system. A sufficient number of inputs and outputs is needed to support this functionality. Turbine meters can be lubricated after a certain number of standard cubic meters and/or after a specified time period, and this functionality can also be manually operated. The same functionality was already provided by gas-net and FC2000.

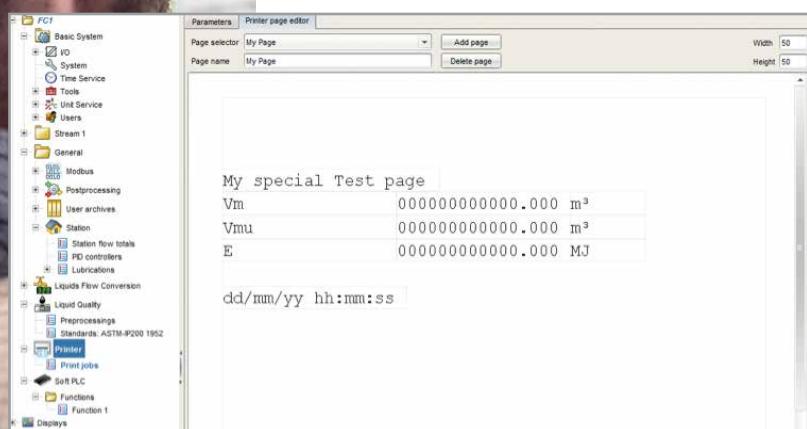
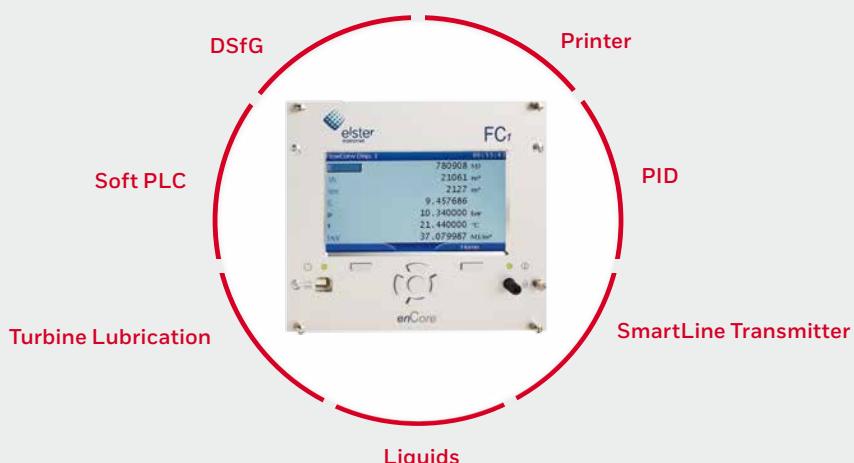


Fig. 1: enSuite Screen

### AFB DSfG **NEW**

DSfG (Digital Interface for Gas Measuring Devices) is a German communications protocol for high-pressure flow computer applications. Today, this protocol is used in certain parts of the world, and that is why FC1 now supports it as well. There is a dedicated flow computer designed and approved for the German market: enCore ZM1. The extended DSfG functionality is now available for all international users.



Lots of New Functions for Liquid Metering – Check for New Opportunities

### AFB Soft PLC NEW

The idea of this AFB is to provide simple PLC (programmable logic controller) functions to enable simple logic and arithmetic functions to meet user requirements. All functions can be configured via the enSuite configuration tool. Absolutely no previous knowledge of PLC programming is needed.

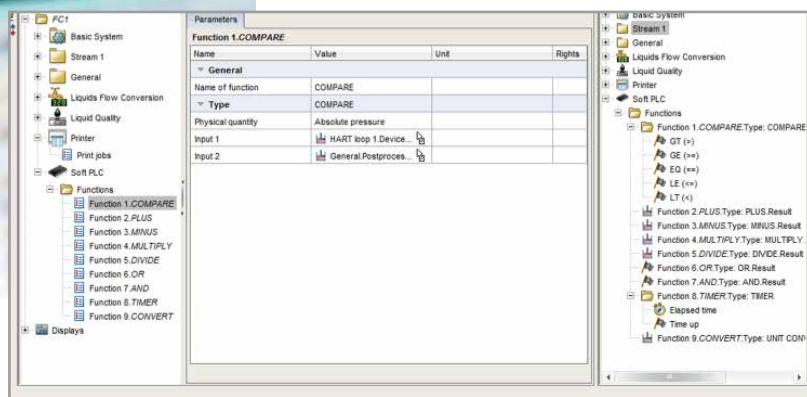


Fig. 2: Logic Functions Screen

Below, please find the list of currently supported logic functions (also see Fig. 2)

- COMPARE: GT (>), GE (>=), EQ (==), LE (<=), LT (<)
- PLUS: +
- MINUS: -
- MULTIPLY: \*
- DIVIDE: /
- OR: |
- AND: &
- TIMER: TON
- CONVERT: Convert value into a new value (e.g. new unit)

### AFB Liquids UPDATE

The liquids tables have already been included in the enCore FC1 firmware for a longer time. They have now been extended to the most commonly used standards/tables. A summary of what is now available in the liquids AFBs is shown below:

Calculation of standard density for crude oils, refined products and lubrication oils based on:

- Table 53/54 (15oC) of ASTM-IP200 1952 and API 11.2.1M/11.2.2M
- Table 53/54 A/B/D (15oC) of API 11.1 MPMS 1980 and API 11.2.1M/11.2.2M
- Table 53/54 A/B/D (15oC) of API 11.1 MPMS 2004

Calculation of standard density for LPG and NGL based on GPA TP-27 2007, TP15 (vapor pressure) and API 11.1-2004/API11.2.2. The following GPA TP-27 2007 tables are included:

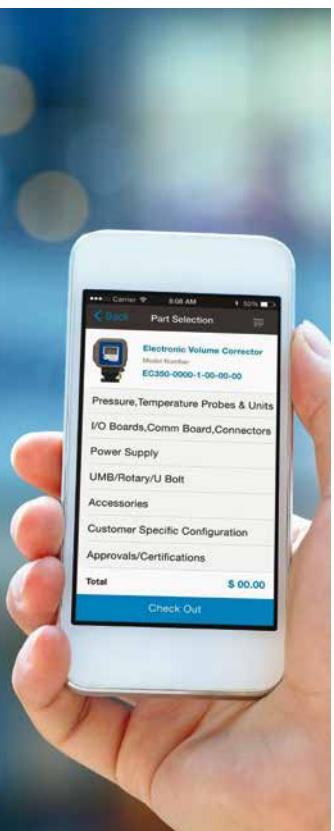
- Table 53/54 E (15oC)
- Table 59/60 E (20oC)
- Table 23/24 E (60oF)

If you want to stay informed about the latest features relating to enSuite and the enCore FC1, why not register for our newsletter? You can register at [www.elster-instrumet.com/en/newsletter](http://www.elster-instrumet.com/en/newsletter); enter your e-mail address to receive information updates about the enCore FC1 and enSuite.

In future issues, we will continue to provide news and applications for the enCore FC1 and enSuite. This will make sure you are always up to date with the enCore FC1.

# Software Solution with Extended Functions for Gas Supply Companies and Grid Operators

There is growing pressure on gas industry organizations to deliver more energy, increase profitability, and minimize financial losses. Many firms are in the process of reevaluating their opportunities to serve existing customers and to expand service to new customers in ways that make sense economically and can be developed under the umbrella of government and industry regulations.



It is clear that greater capital expenditure is necessary to ensure gas distribution system integrity and replace aging infrastructure. At the same time, companies must reduce operating expenses (OPEX) and tightly control capital expenses (CAPEX). With a growing number of customers and a decreasing number of grid operators, gas distribution companies have to increasingly rely on integrated software packages that deliver more than just configuration capability.

Operators need modern, future-proof solutions supporting key industry trends such as digital innovation, Industrial Internet of Things (IIoT) applications and mobile technology.

The MasterLink software – the software platform for the Mercury/Honeywell volume conversion devices – has undergone a total redesign of its user interface to help improve the productivity of users and technicians. It is now compatible with the latest versions of operating systems across mobile (iOS and Android) and personal computer (PC) platforms and offers increased automation along with powerful wizard support while retaining a configuration philosophy familiar to users.

## Key features include:

### Extended Connectivity Capabilities

MasterLink can connect to a meter or volume conversion device in multiple ways:

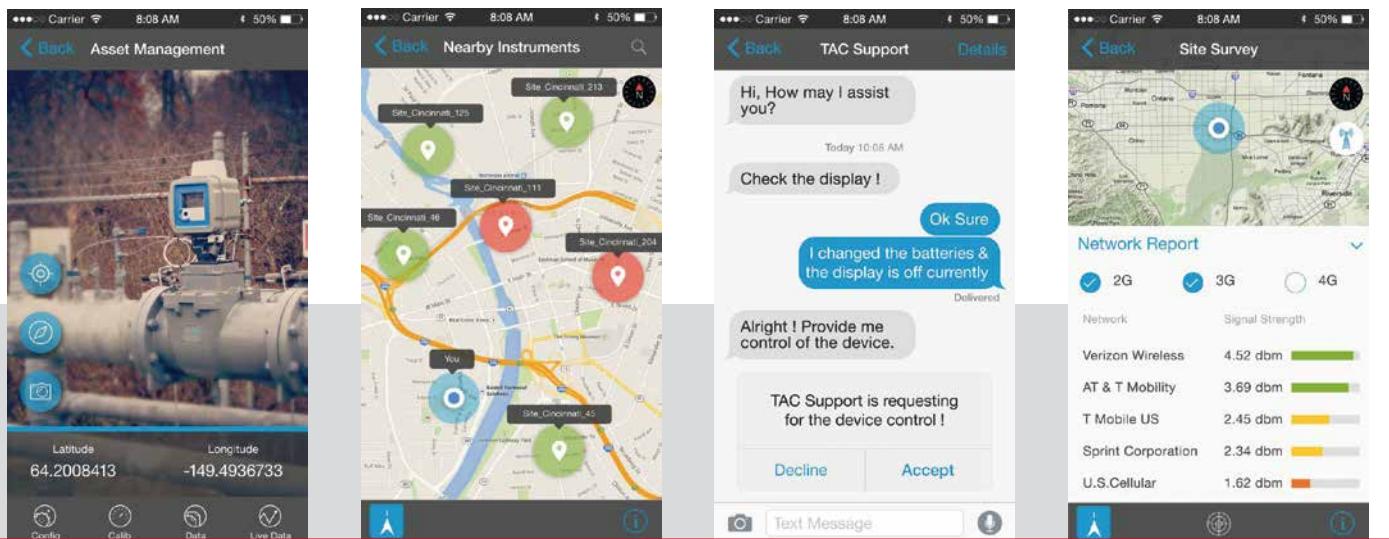
- Over the cellular or landline networks, an operator can access and, if required, troubleshoot a unit from his desk.
- Using short-range communications such as Bluetooth Low Energy (BLE), the operator can connect to a unit within short range (up to 30 m) of the unit.
- Using an infrared connection (IrDA).
- Using a serial RS232/485 link.

### Dashboard-based Design

The MasterLink software employs a dashboard-based design philosophy enabling users to get a one-shot status of connected devices. A gas industry first, the software can connect to the device using short-range wireless communication technology such as BLE and IrDA. Its dashboard displays information about alarms, battery voltage, archive content and logbooks (audit trail), configuration integrity, firmware status, time sync, and live data. This helps the user understand the current condition of the connected device from a holistic point of view.

### Asset Manager

With the MasterLink solution, users can take advantage of the global positioning system (GPS) functionality of their smartphone with an option to geotag field devices with GPS coordinates. The GPS coordinates are linked



to the site ID of the device and stored in a central database. New users can access the GPS information to easily find the physical location of any device they want to visit – even if the site is in a new area. The smartphone will help pinpoint the device using GPS information.

### Nearby Instruments

MasterLink includes a feature which indicates if any nearby devices are issuing alarms or require routine maintenance when the technician is on a site visit. This feature can be set up to detect all devices within a certain radius and send notifications to field technicians if they are in the vicinity.

### Remote TAC Support

MasterLink utilizes instant messaging communication to provide on-demand, full-day expert support. Users can reach out to Honeywell's global Technical Assistance Center (TAC) personnel while on-site, who can help them to resolve their problems. Technicians can also use the connection to access configuration and log files from the device, thereby eliminating the need to send these files to the TAC separately.

### Site Survey

The Site Survey feature in MasterLink relies on a smartphone antenna to receive cellular signals from all the transmission towers in a given area, and then provide a report (with time stamp) indicating the signal levels in decibels. This feature is useful in analyzing a site's

cellular signal coverage before committing to any capital expense decision. Reports are generated at two different points in time to provide a comparison of signal levels or to understand changes in the cellular infrastructure in the area.

### Analytics

The MasterLink software provides detailed analyses on the completeness and accuracy of billing data. It employs an advanced reporting engine, which has options to generate different types of reports as per the user's needs. The software also offers cloud support, so information can be uploaded to cloud-based storage and made available to all authorized parties within the organization.

With the right choice of software for Honeywell/Mercury volume conversion devices and the corresponding system components, gas supply companies and grid operators can increase their productivity, lower operating expenses, and realize more value from investments. By becoming an early adopter of innovative solutions like MasterLink, they can also minimize their downtime, generate more return on installed assets, leverage current industry trends, and prepare their operations for a challenging future.

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# Into the Limelight

Limelight is an intense white light which is produced by heating a piece of lime in a flame of burning oxygen and hydrogen. The effect was discovered in the 1820s and the application of the process to create a bright light was developed around 1825. It was widely used in 19<sup>th</sup> century theaters to illuminate the stage and was first used in a public theater at Covent Garden in London in 1837.

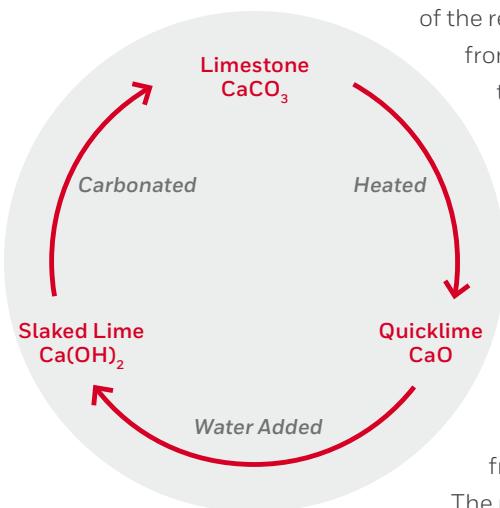


The word “lime” originates from its earliest use as building mortar and has the sense of “sticking or adhering”. This material is still used in large quantities in the construction and engineering sector (including limestone products, concrete, and mortar), as a chemical feedstock, and for sugar refining, among other applications. Lime industries and the use of many of the resulting products date

from prehistoric times in both the Old World and the New World.

Limestone is a naturally occurring and abundant sedimentary rock consisting of high levels of calcium. Lime production begins by extracting limestone from quarries and mines.

The processed stone is transported by conveyor belt to the lime kilns. In those kilns, the calcium carbonate is thermally decomposed into calcium oxide and CO<sub>2</sub>. This product is called quicklime. When we mix the quicklime (CaO) in water, we get calcium hydroxide (Ca(OH)<sub>2</sub>), also known as slaked lime. Finally, when slaked lime recombines with CO<sub>2</sub>, it forms CaCO<sub>3</sub>, thereby closing the lime cycle.



The important step in this process is the thermal decomposition phase. This step is performed by using a lime kiln. Lime kilns add heat to the limestone by burning natural gas. All major lime companies are heavy users of natural gas. With different gas sources (shale gas, LNG, biogas) in the pipeline, customers want to make sure that their process runs smoothly and without any problems.

The efficiency of the furnace can be optimized for the air/fuel ratio when the composition of the incoming gas changes. This can significantly reduce energy consumption and provide substantial savings to the business in terms of equipment life. Optimizing the furnace efficiency has traditionally been a complex and costly process.

With the GasLab Q2, all of this is now made easy – its mode of operation is based on the determination of the infrared absorption and thermal conductivity of the sample gas. The attenuation of the infrared light recorded by a pyroelectric detector determines the concentration and distribution of hydrocarbon and carbon dioxide molecules in the gas; a thermal conductivity detector measures the heat energy conducted by the gas mixture to detect infrared inactive gas components such as nitrogen.



With these measurements, our unique algorithm accurately and almost instantly determines the energy content, Wobbe Index and density of the sample gas. This solution offers a unique combination of high measuring dynamics and accuracy for the calorific value over a wide range of natural gas types. This allows for fast and accurate burner control with changing gas compositions, thus lowering the cost of energy during the production of quicklime.

So whenever an actor was in the center of attention on the theater stage, he was said to be "in the limelight". The same phrase came into use in the 20<sup>th</sup> century to describe something or somebody that is the center of attention. Use of the GasLab Q2 in the production of this very same lime illuminates the idea of calorific value determination made easy in the 21<sup>st</sup> century.

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**Twitter:** <https://twitter.com/honeywellnow>  
**LinkedIn:** <https://www.linkedin.com/company/honeywell-process-solutions>

# Take Full Control of Your Measurements

With a broader hydrocarbon mix and an increased number of pipelines, some carrying contaminated natural gas, transport grid operators need greater insight into the process. Undetected errors in measurement resulting in lost or unaccounted for gas can quickly erode profits. And the same goes for unplanned downtime.

High accuracy and reliability of the metering solution are key, and operators need consistent, precise measurements they can rely on.

Relevant data is available at the primary and secondary measuring devices in the field, and Meascon makes it possible to take this information and make it useful. It regularly pulls and stores relevant diagnostic data and provides a diagnostic dashboard with a real-time view of your gas metering station(s). It automates condition-based monitoring 24/7, detects problems before they occur, and helps to keep measurement uncertainty as low as possible. Streamlining the maintenance process and remote support options reduce operational expenses.

## Faster, More Efficient Diagnosis

Intuitive and easy to use, Meascon enables detailed data analysis for making better decisions regarding maintenance and recalibration.

The system allows for easy health monitoring of your complete metering system.

The system allows for easy health monitoring of your complete metering system. The powerful condition-based monitoring capabilities

detect any significant change either in the flow meter itself or in the process and environment in which it is operating. It runs on a PC, tablet or smartphone, makes sense of complicated data, shows trends, and allows users or a Honeywell expert to see a problem and troubleshoot it.

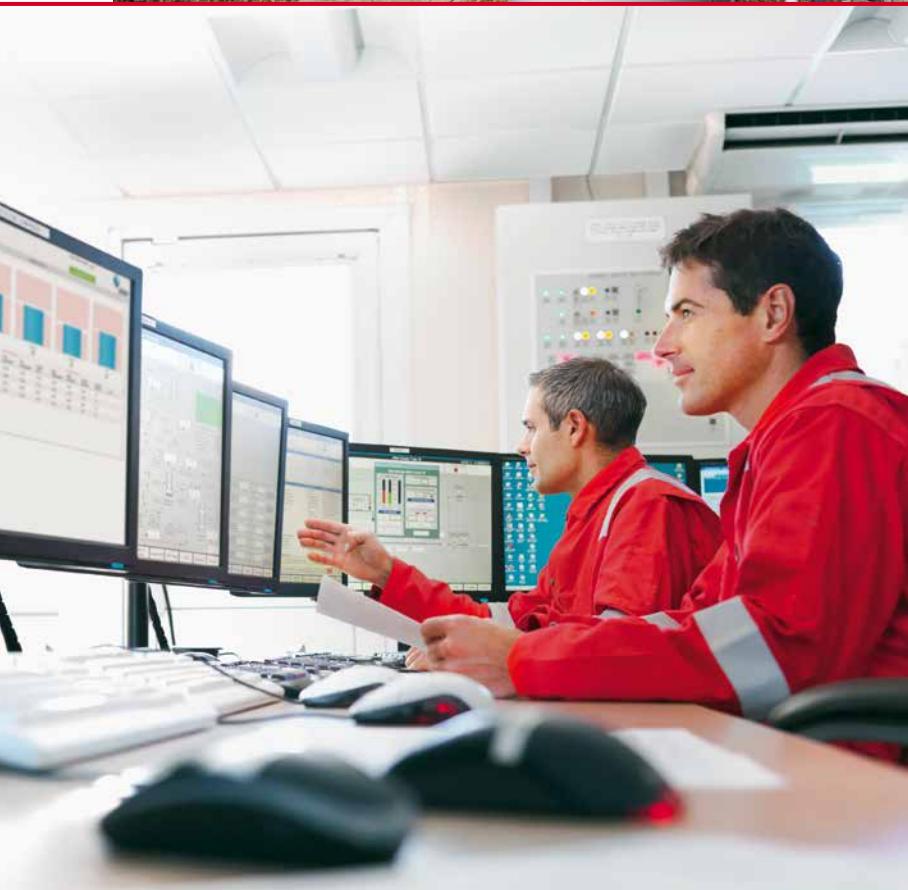
## Changing your Maintenance Strategy

When traditional time-based maintenance (TBM) is used, measuring instruments are calibrated at regular intervals, whether they need it or not. If the risk-based maintenance



(RBM) method is applied, the calibration frequency is reduced after a satisfactory level of stability has been demonstrated. By contrast, with condition-based maintenance (CBM), maintenance is only performed after one or more indicators show that the equipment is going to fail soon or that the equipment performance is deteriorating – thus maintenance only when needed.

With TBM and RBM, the meters are calibrated even when nothing is wrong. Meascon historical diagnostic information can be used as a



basis to extend the periods between the calibration intervals specified by the regulatory authorities. This in turn may result in a shift from a regime of “calendar-based” off-site calibration to off-site calibration “as required”.

Extending a recalibration interval from one to two years can save \$50,000, but correcting inaccuracy can be worth more. An error of 0.5% in gas measurement can add up to \$1 million in the course of a year. You thus want to detect that error as early as possible, not during a

recalibration after one or more years when \$1 million of revenue has gone missing.

## Summary

Honeywell’s CBM system, Meascon, fully integrates Honeywell’s high-pressure products (such as ultrasonic meters, flow computers and gas chromatographs) and takes performance to the next level. Meascon enables gas operators to implement effective preventive maintenance strategies and minimize instrument calibration requirements in order to reduce their operating expenses.

The information can be fed directly into a preventive maintenance schedule, thus improving response time for diagnosing and rectifying any potential meter or process issues and significantly reducing service engineer site visits. It increases the reliance and confidence in the metering section and reduces the lost and unaccounted for (LAUF) gas caused by faulty measurements, which in turn decreases costs and the need to back calculate incorrect measurements. The audit trail supports third-party audits and metrological approvals.

How you benefit: You can take full control of your measurements. What we offer: A reliable all-in package from Honeywell for you as gas grid operators!

Eric Bras

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# Olympic Relay Runners – The Show Must Go On!

On August 5, 2016 at 23:48 local time, Vanderlei de Lima, the winner of the marathon at the 2004 Olympic Games, lit the Olympic flame of the 31<sup>st</sup> Olympic Games of the modern age in Rio de Janeiro.

This was not only an extremely emotional moment for the 11,000 participants, but also for a special team at Kromschroeder S.A. in Barcelona (Spain). For them, the journey of the Olympic flame had started a lot earlier than the 95 days it took the 12,000 relay runners to carry the flame from its starting point in Olympia in Greece to its destination in Rio de Janeiro.



## CE Certificate

24 years had gone by since Kromschroeder S.A. (or simply "Kroms", as we used to call them) made the torches for the Barcelona Olympics – and Elster American Meter was selected to produce the torches for the 1996 Games in Atlanta. Luckily enough, quite a bit of that know-how was preserved and was complemented with the latest experiences gained through Kroms' activities not only in gas metering, but also in pressure regulation and gas combustion.

For the second time in history, Kromschroeder S.A. was selected to produce the internals of the twelve thousand Olympic torches. "So what?" you may think. "A gas bottle, a regulating mechanism, some pipes and a burner in a nice envelope – nothing special!" Really? Isidro Tort Escobar, the Managing Director of Honeywell-Elster's JV company and representative in Spain can tell a different story.



The 2016 Olympic Torch



The Kromschroeder S.A. Project Team in Barcelona



Resistance to Rain

The torch for the Rio Olympics was not just a gas-fired torch like any other. For the first time in history, the torch was a self-expanding sculpture. The designers put a great deal of thought into its appearance, symbolism and shape. The top part is colored in gold and stands for heaven and the sun. The grooves created between the various segments when the torch is extended represent the shape of the green mountains surrounding the city, the lines of the promenade at Copacabana and the waves of the ocean. Even the white surface was given a triangular texture standing for the three Olympic values of excellence, friendship, and respect. However, squeezing the gas reservoir and combustion system into this sculpture for the 15 minutes of flame operation was the job of the engineering team at Kroms – and of course, it was also their job to find and source an appropriate, special gas mixture as well as getting the required CE certification for a “Portable Vapor Pressure Liquefied Petroleum Gas Appliance” including operating instructions.

It was not just a question of accommodating the technology, obtaining the approvals and completing the administrative work. There was a lot of testing, testing, and even more testing! The torches have to operate under all weather conditions – wind and rain, low and high pressure, in warm or cold climates, or humid or dry environments, and all the while, the flame must look good and be properly visible. Runners can stumble and fall, with the torch dropping onto, and rolling over, the hard surface of the street.



But that is not all: On some occasions, the runners were attacked on their journey, either by people wanting to steal the torch or by protesters with fire extinguishers. All of this happened despite the flame being protected by ten police officers at all times. Yet whatever happens: The show must go on – the flame must not go out and it didn't! We can all imagine the feeling of relief experienced by the team at Kroms when the big flame was finally lit. So now you know all this, you can understand why the preparations for the Olympic Torch Relay started in April 2014, way before the first runner set off.

But what does all this mean for you, our customers? It is highly improbable that you will be awarding the next Olympic Torch project in the near future, but I am sure you will have challenging projects in the fields of measurement, control, and combustion that need to be properly executed. We would be delighted to welcome you to our world of experience, whether it is directly with Honeywell or with one of our related companies or distributors. We have the resources to make your projects happen.

Peter Hampel

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# Rotary Gas Meter RABO® Celebrates Three Years of Success!

Whether a new product is successful on the market, and how quickly it achieves this success, depends on many different factors. Today, we are delighted to be able to look back on what has been achieved since the launch of the new rotary gas meter RABO in 2013. The devices have been subjected to intensive, long-term tests for product qualification at our customers' premises since their market launch.

After only 36 months, the RABO is now in use all over the world and has become a success story. Our customers benefit from both the excellent, future-oriented product characteristics and the highest product quality in accordance with German quality standards.

The range is constantly being extended due to new customer requirements, for example through the introduction of meter size G400 or the new index version S2, with the aim of creating more opportunities for growth and optimizing the offering.



Over **30,000** RABO devices have been sold

In use in more than **40 countries** worldwide

Volumes of **> 30 million cubic meters of natural gas** are measured each day throughout the world thanks to the RABO (assuming an average flow rate of 50 m<sup>3</sup>/h per device)

"Far out": RABO customers in New Zealand are **18,559 km** away

Around **300 tons of aluminum** and **100 tons of spheroidal cast iron** have been used to manufacture RABO housings

More than **8,000 meters** is the combined length of all rotary pistons that have been fitted – approximately the height of Mount Everest!



**Volume Converters: Compact – Simple – Good!**

# EK205 Now with MID Approval

A cost-effective solution for standard applications is now also available in Europe for all new volume converters EK205.

The latest volume converter Elster® EK205 from Honeywell has taken advantage of every opportunity in order to offer the customer a “simple” and cost-effective device but without making any concessions as regards quality or durability!

To begin with, it was planned that the volume converter would only be available outside Europe. For this reason, MID approval was obtained for the EK205. However, customers/energy supply companies located in Europe can now also benefit from the advantages offered by this approval:

- Compact design → Perfectly adapted to Elster RABO and all other meters
- Quicker installation → No screws, no grounding, no shielded cables
- Graphics display →  $V_b$  and  $V_m$  are shown on the display at the same time
- Non-volatile data logger with huge capacity → Hourly values for more than one year

- Automatic protocol detection → Modbus for SCADA and IEC 62056-21 for configuration
- Software update in accordance with Welmec 7.2 → No recalibration of the sensors required
- and many more!

## Curious to find out more?

You will find all the information you need at [www.ek205.info](http://www.ek205.info)

Rüdiger Pfeil

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## EK205 Volume Conversion Device

Elster GmbH, Steinern Str. 19-21, 55252 MAINZ-KASTEL, GERMANY

**CE** M16 0102

Type examination no.: T10873  
MPE at ref. conditions: 0,5%  
IP 65 EN12405-1

Year: 2016 Serialno.: 4491287

**CE** 0044

Ex II 1G Ex ia IIC T4 Ga LCIE 16 ATEX 3007 X

Tamb.: -25°C to +55°C

Electrical parameters and batteries see EC Type examination certificate  
Warning - Potential electrostatic charging hazard - see instructions

# The Best of Both Worlds

The ultrasonic gas flow meter Q.Sonic<sup>max</sup>, our new, additional family member, uses the most accurate acoustic path configuration available on the market. With two swirl paths (double reflection) for linearity and stability and six direct paths for enhanced robustness. Combine the best of both worlds in order to comply with the highest industry standards with the lowest uncertainty, ready to meet individual operating requirements.

The Q.Sonic<sup>max</sup> is the first 8-path meter to combine reflection paths with direct paths, which results in detailed flow profile recognition with superb noise immunity. Due to this unique patented path configuration, the device offers the lowest uncertainty possible with the most extended diagnostics capabilities. The reflective paths with their sophisticated diagnostics mean the meter quickly identifies swirl, fouling or liquids inside the meter. The direct paths provide enhanced robustness for higher valve noise immunity and CO<sub>2</sub>-rich applications. Internal pressure and temperature sensors ensure accurate calculation of the Reynolds number and dynamic correction of the meter body.

## SonicExplorer Diagnostic Software

The Q.Sonic<sup>max</sup> is also available with our PC-based SonicExplorer software, so users can configure, analyze, and monitor the meter remotely. A wide range of tools allows meter health and performance to be tracked and analyzed in real time or from historical data. Functions include health reporting, diagnostics analysis, spectral noise analysis, and fingerprint reference cases. Powerful but easy to use, the SonicExplorer software gives you all the information you need to make informed decisions about maintenance and recalibration, with the aim of improving reliability and accuracy of measurements even further.

## No Compromise on OIML Accuracy Class 0.5

Since the publication of the AGA Report No. 9 in 1998, multipath ultrasonic flow meters have become the dominant method for measuring flow in large pipelines, particularly for the purpose of custody transfer of natural gas. There are many reasons for this trend – excellent measurement accuracy, high turndown, good resistance to installation effects, and cost effectiveness when compared to multiple runs of other kinds of meters, such as orifice plates. As good as these meters may be, like all meters they can still be affected by the conditions in which they are placed. In particular, the design of the upstream pipework and its operating conditions determine the velocity profile of the fluid as it passes through the meter. In order to minimize this installation effect, the market



## Focus on GasExpo:

# RVC Launch in China

has clearly shown a desire for more reliable metering with less overall uncertainty in the last few years and is moving towards ultrasonic meters that meet OIML Accuracy Class 0.5. The question that is now arising is: Will the meter still be as accurate in the installation? And above all, can we make use of the good resistance to installation effects and the lower measurement uncertainty resulting from this or are we overestimating the ability of the meter to compensate for disturbed flow profiles?

In the quest to get OIML Accuracy Class 0.5 approval, the gas industry has sometimes used creative shortcuts and claimed to be OIML Accuracy Class 0.5-compliant, but this often comes with a price, as exclusions from the standard and/or restrictions to the flow range have been applied to be able to make this claim.

The Q.Sonic<sup>max</sup> offers unequalled flow profile recognition and maintains the lowest uncertainty in all situations. No deviations from the standard or restricted flow rates have had to be accepted in order to comply with OIML Accuracy Class 0.5. The Q.Sonic<sup>max</sup> with SonicExplorer software will be available in early 2017, so please do not hesitate to contact your local sales office for more information.

Eric Bras

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At the GasExpo, which was held September 21-23 in Beijing, Honeywell introduced a number of new products for the Chinese gas market. One highlight was the new combined product offer called RVC comprising the RABO rotary gas meter and EK205 volume converter.

The RABO was first introduced and tested by major Chinese companies in 2015. After successful trial runs and due to its proven track record in other parts of the world, it is now ready to be adapted for more clients. Together with the newly launched EK205, it is the perfect combination for this fast-growing market, where more and more C&I users are considering gas as their energy resource of choice. Benefits of the combined offer include low overall



system uncertainty, wide measuring ranges of both the meter and the EK, which enables a broad range of applications, low maintenance requirements (no standard service needed in the first 5 years of operation), and superior quality thanks to "design made in Germany" and stringent production standards – just as customers have come to expect from Elster product lines.

Tim Vogel

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**Focus on:**

# HUG EMEA / CPC

In the second 2016 edition of Profiles, we covered the HUG Americas event. As a short reminder, HUG is short for Honeywell Users Group and its main objective is to introduce existing and new customers to Honeywell's new product launches. It also aims to provide a platform for users from different countries, industries, and roles to share their knowledge with each other.

Another of its goals is to provide Honeywell with feedback regarding its offerings and to allow users to get in touch with Honeywell solution and product experts to discuss current and future challenges as well as possible solutions.

The 2016 HUG EMEA took place at the World Forum in The Hague which is located just a short tram ride from downtown The Hague or the North Sea. As the event was held at the end of October, strolling along the beach promenade was colder than one could wish for. Nonetheless, over 1000 participants from 466 companies, 15 industries, and a total of 77 countries across the region were there to take part in the event.

In parallel, Honeywell channel partners from the EMEA region (Europe, Middle East, and Africa) were invited to the Channel Partner Conference (CPC) which took place in the same venue. Honeywell channel partners include system integrators, distributors, representatives



and OEMs. During the CPC, channel partners were able to attend market-specific tracks that gave updates on new products and included presentations of the wider Honeywell portfolio as well as technical training courses to enable the participants to better serve customer needs. A total of 13 companies which had been pure Elster partners up to the merger also took part in the event – another step towards a successful integration.

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Tim Vogel

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