talkline

Beverage Production

Endress+Hauser
People for Process Automation

Index

7 Heartbeat Technology™

Minimize downtime and maximize plant productivity with Heartbeat Technology™

9 New CEO

Mr. Anthony (Tony) Varga, CEO and general manager of Canadian operations

12 Liquiphant

Setting a new level for reliable measurement

JOYEUX NOËL ★ MERRY CHRISTMAS

Endress+Hauser
People for Process Automation

Our valued friends, customers and business partners

Dear Reader,

Welcome to our final issue of *Talkline* for 2015. As the year winds down and we all get set to embrace another Canadian winter, I want to personally thank each and every one of you for your continued support and confidence. Together, we have all weathered some challenging times this year. As I have noted before, when we work through challenges together, our combined efforts and contributions lead to superior results.

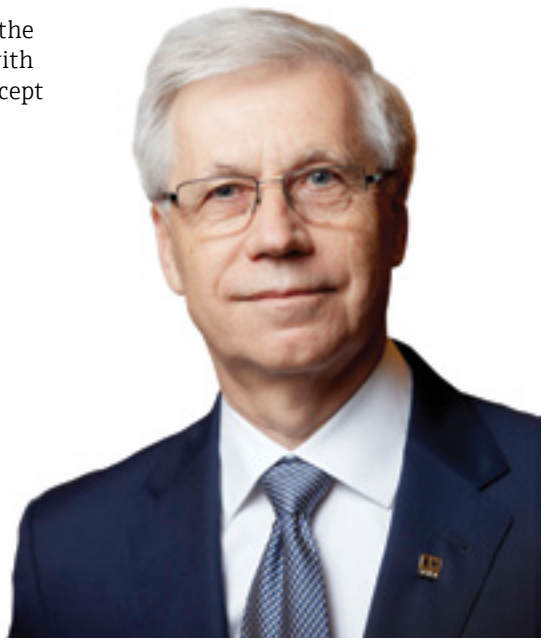
Not only is the year winding down, but so is my career with Endress+Hauser. I am retiring at the end of the year, after a 40-year association with the company, 20 of them as CEO. It has been an honour to have been part of this team — a team you can count on to partner with in identifying, addressing and delivering process improvements. My successor is Anthony (Tony) Varga, who joined the company on September 8. He is an experienced leader and possesses vast industry knowledge. Please take a look at the announcement for Tony on page 9.

In the pages that follow, we share some of our expertise for optimizing beverage production. We can help facilitate reductions in water and cleaning agent usage, which additionally contributes to lower energy requirements in reaching cleaning and sterilization temperatures. We also share our flow verification and monitoring capabilities featuring Heartbeat Technology™. Learn how Heartbeat Technology™ can help you to maximize your plant availability. As always, you can also find information on some of our featured products, designed to address your measurement challenges. You can top it all off by following Endress+Hauser Canada Ltd on LinkedIn. Do so before December 31, 2015 and automatically be entered into a draw for an Apple Watch. Become part of our social community and keep up-to-date with our latest news and information.

We are here to help you be as competitive and successful as possible in the markets you serve. At Endress+Hauser we are all focused on working with you towards the achievement of your goals. As winter sets in, please accept our sincere best wishes for a healthy, safe and happy holiday season.

Sincerely,

Richard Lewandowski
CEO



FOLLOW ENDRESS+HAUSER CANADA LTD FOR A CHANCE TO

WIN an Apple Watch

Follow

www.linkedin.com/company/endress-hauser-canada-ltd-

Follow Endress+Hauser Canada Ltd on LinkedIn between September 1 to December 31, 2015 and automatically be entered in a draw for a chance to win a free Apple Watch.*

*Not valid in Quebec. Some restrictions apply. For full rules and regulations, visit www.ca.endress.com.

Connect with us

For the latest updates, events and process automation news, join us on our social channels. Visit Endress+Hauser Canada Ltd on Facebook, Twitter and LinkedIn.

/EndressHauserCanadaLtd

/Endress_CA

/company/endress-hauser-canada-ltd-

Optimized Beverage Production

Many technological advances have changed the way fermented, distilled or alcohol-free beverages are produced commercially. Manufacturers need production capabilities to cover large volumes for cost competitiveness on one hand, yet they require the flexibility to cover niche products on the other. To cover both is challenging—when a plant was originally built for large batch processes.

How can today's manufacturers achieve a plant design that meets larger production volumes and energy efficiency cleaning processes, while maintaining flexibility for smaller production lot sizes?

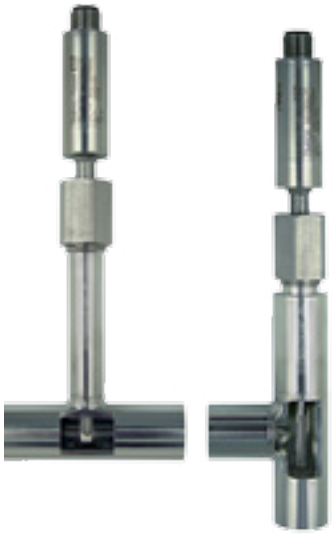
For plants that have had many conventional expansions, an additional challenge can be inefficient layouts. For these types of facilities the following recommendations will require process changes and investment, but it should be noted that they stand to reap the most in terms of increases in efficiency. It all starts with establishing the requirements for piping. The layout is done with 3D engineering tools that quickly plan the most efficient layout, with the fewest number of bends and as straight a layout as possible. Future additions can be pre-planned so that the installation stays lean, well into the plannable future. Both processing and cleaning requirements need to be considered for the correct selection of pipe sizes. The reduction in bends and pipe size changes are imperative to eliminate possible mixing while phase shifting between products or cleaning.

The hygienic design of the pipe system as well as the other installed equipment enables a faster phase shift, resulting in higher plant uptime and availability. Less phase mixing translates into a reduction of raw material wastage, as well as prevention of the consequential increase in the waste water costs that would have resulted from higher waste product loads. Reductions in water and cleaning agent usage are backed up by lower energy requirements to reach cleaning and sterilization temperatures.

How to build and equip plants to utilize theses advantages is detailed in guidelines published by European Hygienic Engineering & Design Group. EHEDG also offers hygienic certification of equipment that passes rigorous tests for hygienic cleanability. The passed tests are published on www.EHEDG.org. Internationally 3A certificates are also used for this purpose, following very similar principles, but without the testing component.

Liquipoint FTW 23

OUSAF 22



TMR 35

Promag H 100

Aside from the proactive testing of our hygienically designed sensors, Endress+Hauser also offers advice on optimal installation to ensure the highest level of hygienic cleanability and efficiency. Technical sensor requirements must also be considered to provide quality information that allows operating the processes with different recipes automatically. In particular, attention must be paid to the wide measurement range required for scalable production. Many small, unassuming sensors play very important roles, such as the level and pump protection switch Liquipoint FTW 23, the fast compact temperature sensor TMR 35, and Ceraphant PTP 23 pressure switch. They provide accurate and reliable readings that are necessary to ensure the efficient operation of an automated production process.

Of course with the handling of many different recipes and the need to produce a stable quality even with varying raw materials, the spotlight is on the sensors directly ensuring product quality and safety: density with Promass F or Liquiphant Density FTL 50H; viscosity with Promass I; conductivity with Smartec CLD 18 or CLD 134; dissolved oxygen with amperometric COS 22D or optically COS 81 D; pH with Glassless ISFET sensor CPS 471D; colour with optical sensor OUSAF 22 and turbidity OUSAF 44. With these sensors properly installed and verified to the measured values of the laboratory, production can be controlled based on defined results.

Changing raw materials or utility control parameter fluctuations such as steam vapor pressure requires the process to automatically adapt to it. Continuous monitoring warrants a look at two sensors, one of which is already on the market, the Promag H 100. As a magnetically inductive flow sensor it measures the flow rate as all magmeters do, but also has a new integrated conductivity measurement. With the conductivity measurement variations in the formulation, possibly from water or detergent, ingress can be immediately identified to safeguard quality.

The Promag H 100 also has an integrated temperature sensor that is used to continuously compensate the conductivity and volumetric measurement. In 2016 the second sensor will enter the market and revolutionize continuous monitoring. It is being designed for temperature measuring points in product safety relevant applications. The sensor's key feature is the ability to continuously monitor its own calibration status after each production cycle, ensuring that the last batch was prepared correctly and that it is ready for the next one.

Endress+Hauser helps ensure reliable processes and high quality. This is not limited to high-end, quality-related sensors, but also applies to simple switches and sensors that secure the process. All together, an installation following the hygienic design requirements of EHEDG/3A allows large plants to prepare small volumes without impact on the cleaning processes. With a strong hygienic design, rapid rinsing and cleaning steps are safely and efficiently handled to enable more flexible production.

Flow verification and monitoring with Heartbeat Technology™

Maximize plant availability. If you want to know how your device is performing in order to minimize downtime and maximize plant productivity, then our flowmeters with Heartbeat Technology™ are the ideal solution!

What is it? Heartbeat Technology™ provides a continuous healthcheck of the flowmeter, ensuring key parameters are performing within specification at all times. Deviation from the factory reference values will trigger warnings as per NAMUR NE 107 (see table below). This diagnostic function is available as standard with our Heartbeat-enabled flowmeters and has a total test coverage of up to 98%.

As additional features, verification and monitoring can be added to the Heartbeat diagnostics to provide on-demand reporting, trend analysis and live quantitative performance data. The verification enables documented proof that the flowmeter is functional and performing within specification. The monitoring functionality is ideally suited to demanding applications, alerting the user to flowmeter damage such as corrosion or abrasion, thereby reducing the risk of unexpected failure. This can be automated by assigning one of the Heartbeat defined variables to a condition monitoring system. The continuous monitoring even allows identification of faults that cannot be detected by calibration or verification.

Maximum plant availability The verification procedure is typically performed within a few minutes and can be initiated through the display, FieldCare or web server (if incorporated). The report can be downloaded via FieldCare or the web server in PDF format for printing or archiving. The eight most recent verifications are stored

F	'Failure' An instrument failure has occured. The measured value is not valid anymore.	
M	'Maintenance required' Maintenance is required. The measured value continues to be valid.	
C	'Function check' The instrument is in service mode (e.g. during simulation).	
S	'Outside of specification' The instrument is operated: ▪ Outside of its technical specifications (e.g. during start-up or cleaning). ▪ Outside of the parameterisation set by the user (e.g. flow outside of the parameterised span).	
OK	Measurement faultless.	

NAMUR NE 107: self-monitoring and diagnosis of field instruments

Flowmeters with Heartbeat Technology™

- Promass 100 Coriolis flowmeters
- Promass 200 Coriolis flowmeters
- Promag 100 electromagnetic flowmeters
- Promag 200 electromagnetic flowmeters
- Promag 400 electromagnetic flowmeters
- Prowirl 200 vortex flowmeters (no monitoring)

The verification procedure is typically performed within minutes and can be initiated through the display, FieldCare or webserver (if incorporated).

in the flowmeter's secure, non-volatile memory module to allow trend monitoring of critical parameters for predictive maintenance.

The internal verification is performed with no process interruption, avoiding unecessary downtime for non-safety critical applications. A successful verification report can also be used as a quality document in accordance with ISO 9001 to extend the calibration interval. The pass/fail report segregates the areas of testing so any errors can be identified quickly and easily.

Heartbeat Technology™ is available regardless of the outputs chosen, allowing for seamless integration with a variety of communication protocols.

Safety by design Internal references, embedded during manufacture, provide a comparison for the test parameters of the flowmeter covering the entire signal chain. For the most critical parameters dual references are used to deliver a highly stable, redundant and traceable signal to ensure absolute confidence in the flowmeter's behaviour and performance.

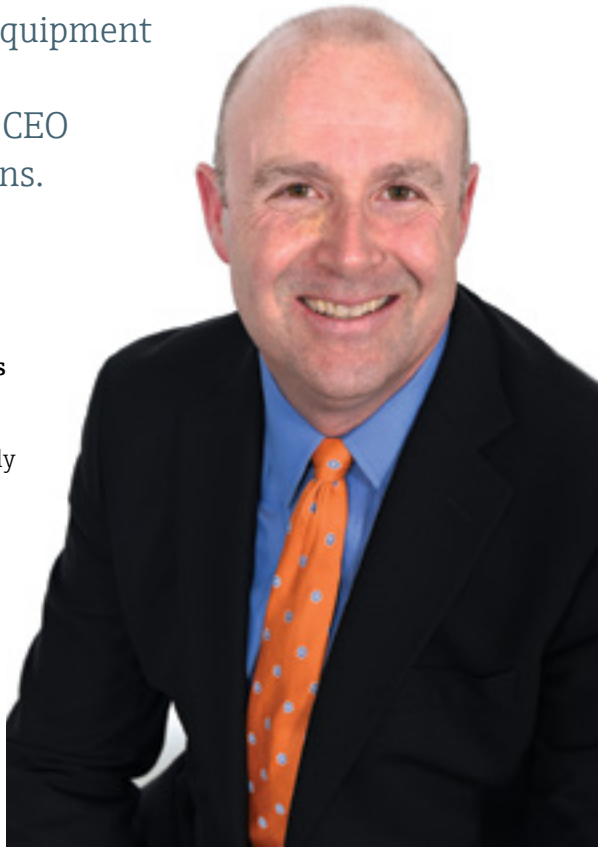
Heartbeat verification allows operators to create documented proof that diagnostic checks have been performed and thereby supports the documentation of proof testing in accordance with IEC 61511-1 for safety instrumented systems. The SIL-certified Heartbeat-enabled flowmeters have also been designed in accordance with IEC 61508, ensuring safety and confidence.

Complete flexibility The software package is available retrospectively and can be activated by simply purchasing the release code and entering it in the menu or via FieldCare. Our Service Department can also perform and compile the verifications during a site visit, regardless of whether the Heartbeat package has been purchased or not, offering the chance to evaluate the benefits Heartbeat Technology™ will bring.

Verification report independently certified to IEC 61508 according to the TÜV SÜD.

Endress+Hauser Canada welcomes new Chief Executive Officer

International measurement and automation equipment firm Endress+Hauser today announced the appointment of Mr. Anthony (Tony) Varga as CEO and general manager of its Canadian operations.



Mr. Varga will officially assume the helm of Endress+Hauser Canada in January 2016, coinciding with the retirement of Richard Lewandowski, CEO and general manager, who successfully led the Canadian business unit through tremendous growth over 20 years as CEO.

Mr. Varga joins Endress+Hauser from Rittal Systems, most recently serving as president of Rittal Canada and senior vice-president of Rittal's North American Sales.

"I'm excited to work with the clients and employees of Endress+Hauser Canada," said Mr. Varga. "Endress+Hauser is an international leader in its field and I have already seen how that culture of excellence is reflected in the Canadian team members I have met. We have a great deal to offer the Canadian marketplace."

Mr. Varga holds a diploma in Electrical Engineering Technology and an MBA.

Endress+Hauser 2016 Calendar

Place your order for our FREE calendar at info@ca.endress.com

How Can We Serve You Better?

At Endress+Hauser we strive to continuously improve how we serve our customers. In order to do this, we need your feedback! If you've worked with us and haven't commented on our performance lately, please consider doing so. Our Customer Satisfaction Survey helps us identify and address areas where we can improve. We take this information seriously, and strive to integrate the learning into our day-to-day business. In the end, your feedback allows us to serve you better.

Customer Satisfaction Survey Please help us continuously improve by taking our two-minute survey.

Customer Survey:
eh.primarytargetmedia.com/survey

Measurement Training Sessions

Edmonton, Alberta

Fundamentals of Flow Measurement

IN THEORY

- Explore the principles of flow measurement
- Review related products—their applications, advantages and limitations
- Learn the preferred installation methods in a number of scenarios

IN PRACTICE

- Gain hands-on experience with: cavitation, pulsation, vibration, gas entrainment, improper installation, different process fluids impact on measurement

Fundamentals of Level Measurement

IN THEORY

- Explore the principles of level measurement
- Review related products—their applications, advantages and limitations
- Learn the preferred installation methods in a number of scenarios

IN PRACTICE

- Gain hands-on experience with: condensation, envelope curves, interface, turbulence, improper installation, different process fluids impact on measurement

Contact Us
info@ca.endress.com

Fundamentals of Density Measurement

IN THEORY

- Explore the methods of density measurement
- Review related products—their applications, advantages and limitations
- Learn the preferred installation methods in a number of scenarios

IN PRACTICE

- Gain hands-on experience with: Liquiphant density, Coriolis flow, gamma (density in pipe), density profiling

Fundamentals of Profibus

IN THEORY

- Review the principles of fieldbus communication

IN PRACTICE

- Build and troubleshoot segments of a Profibus installation

FOUNDATION Fieldbus

IN THEORY

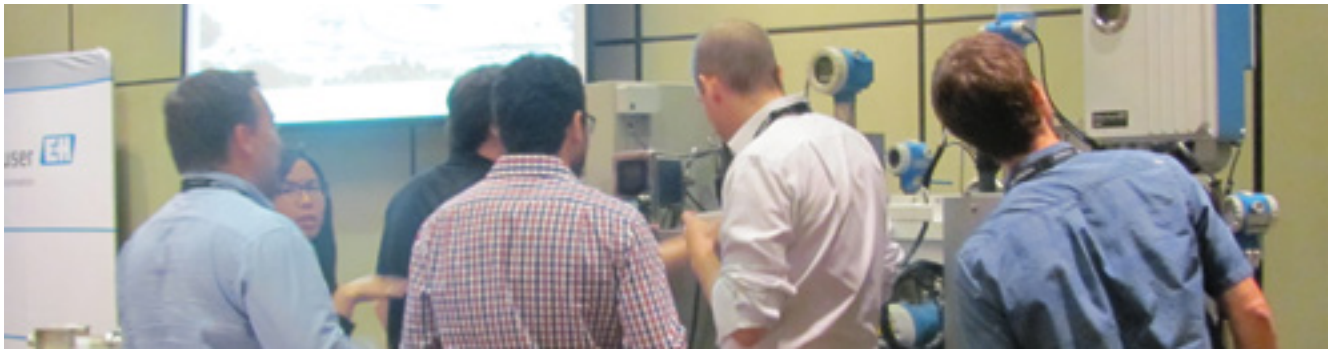
- Review the principles of certified digital, serial, two-way communications systems

IN PRACTICE

- Build and troubleshoot segments of a FOUNDATION Fieldbus installation

Trade Shows 2016

February 1–2	Manitoba Water & Wastewater Association	Winnipeg MB
March 14–18	Alberta Water & Wastewater Operators Association	Banff AB
March 15–16	CsHm	Calgary AB
March 15–16	Salon des Teq	Quebec City QC
March 22	ISA Hamilton	Hamilton ON
April 10–12	OPCEA - Water Environment Association of Ontario	Niagara Falls ON
April 17–20	Maritime Provinces Water & Wastewater Association	Saint John NB
April 19	Rockwell Automation on the Move – Quebec City	Quebec City QC
April 21	Rockwell Automation on the Move – Montreal	Montreal QC
April 20–21	ISA Edmonton	Edmonton AB
May 1–4	Canadian Institute of Mining Metallurgy and Petroleum	Vancouver BC
May 1–3	BC Water & Waste Association	Whistler AB
June 7–9	Global Petroleum Show	Calgary AB
June 22–23	Atlantic Canada Petroleum Show	St. John's NF
July 20–21	Rockwell Automation on the Move – Calgary	Calgary AB
September 6–9	World Heavy Oil Congress	Calgary AB
September 18–21	Atlantic Canada Water & Wastewater Association	Moncton NB
September 24–28	Water Environment Federation's Technical Exhibition and Conference	New Orleans, Louisiana USA
October 4–7	Western Canada Water	Calgary AB
October 18	Grande Prairie CsHm	Grande Prairie AB
October 20–21	Northwestern Ontario Water & Wastewater Conference	Thunder Bay ON
November 2–4	Saskatchewan Water and Wastewater Association	Saskatoon SK



Training 2016

Certified PROFIBUS PA Professional Training

March 28–April 1	Burlington, ON
May 3–6	Edmonton, AB
October 11–14	Edmonton, AB
November 22–25	Burlington, ON

Endress+Hauser FOUNDATION Fieldbus Training

April 26–28	Burlington, ON
September 13–15	Edmonton, AB

Time to Move On

Setting a new Level for Reliable Measurement

About Endress+Hauser's vibronic tuning fork — Liquiphant

Developed in the late 1960s by Endress+Hauser, Liquiphant tuning forks have become widely applied in a number of process automation industries. They have become the preferred technology for prevention of overfilling and low liquid levels (heater treaters) in tanks, with more than 3 million devices installed worldwide.

Compared to other level measurement alternatives, such as mechanical floats, Liquiphant offers a number of benefits, including:

- self-monitoring
- self-cleaning
- detection of tank overflow or overheat
- resistance to clogging or freezing
- no wear and tear (due to the lack of moving parts)

The standard built-in intelligence and self-diagnostics of Liquiphant allows customers to simply "fit and forget" about their high and low tank level switches. Liquiphant switches are incredibly reliable and can be simply retrofitted in existing installations in most cases.

A global company active in the Alberta oilfields was looking to increase the level of safety in its upstream facilities and, at the same time, to improve efficiencies and reduce maintenance costs. Endress+Hauser vibronic tuning forks provided the solution they were looking for and have now been installed as high-level switches as a standard feature on their tanks.

The company decided to abandon traditional float switches after a spill occurred on a remote well site, due to a failure of a traditional device. The mechanical switch became plugged and was no longer able to indicate a high-level scenario, allowing an emulsion tank to overflow and about 3,000 barrels of heavy oil and water were released before it was noticed.

A switch replacement program was instituted as a result, mostly carried out in 2014. An additional benefit of the program was improved efficiencies and usage of maintenance technicians. Unnecessary trips into the field were eliminated, while process safety was improved. "We can now focus on other things in the area, without having to worry about these high-level switches anymore," says the maintenance lead for the company's eastern Alberta region.

The company operates about 700 remote well sites in the area and was able improve their maintenance efforts by 25% after replacing the switches.

"The timing of the replacement program worked out perfectly, as it allowed us to improve our efficiencies just when we needed it," says the operations manager involved, referring to the downturn of oil prices in late 2014.

For more information
www.ca.endress.com/liquiphant-oil-gas

Products Spotlight

Cleanfit CPA875

Hygienic and sterile retractable assembly for pH, ORP, DO

- Modular design provides installation flexibility and reduces spare parts
- Unique seal design ensures safe and sterile online sensor exchange and cleaning
- High-pressure operation with either manual or pneumatic actuation

www.ca.endress.com/analysis

CUS52D

Low range online turbidity system

- Non-liquid verification and calibration for low range turbidity
- Direct pipe insertion design eliminates product loss
- Single sensor for all turbidity measuring ranges

www.ca.endress.com/CUS52D

CM44xR

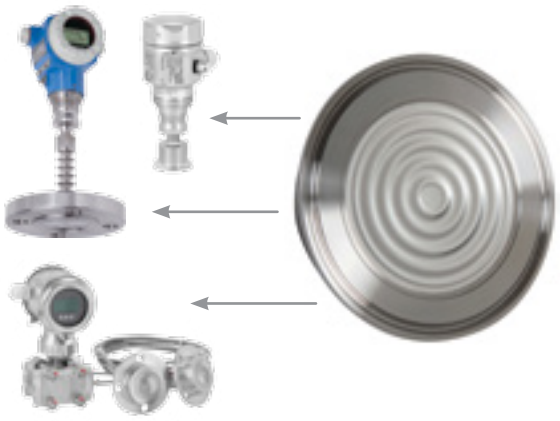
Compact, DIN rail mount multi-parameter transmitter system

- Easy plug-and-play setup, commissioning and maintenance with Memosens digital sensors
- Standardized Liquiline modules reduce spare parts and simplify operator training
- DIN rail mount design, 8 channel expandability with optional remote display

www.ca.endress.com/analysis

TempC Membrane

For diaphragm seals



Temperature compensated membrane

- Up to 8X faster temperature recovery time to CIP/SIP
- Drastically reduced zero shift adjustments
- Up to 10X more accurate than conventional membrane

www.ca.endress.com/temperature

Products Spotlight

Memosens

Contactless, digital, innovative

- Inductive metal-free connection for increased signal stability with no corrosion or moisture influences
- Lab calibrations possible with in-sensor data storage (all sensors pre-calibrated at the factory)
- Sensor traceability with automated storage of process and sensor data

www.ca.endress.com/analysis

Memobase Plus CYZ71D

Calibrate, measure and document

- Save time and money with one simple calibration and documentation tool
- Simple sensor exchange for the highest plant availability
- Work safely in a clean, controlled environment and eliminate human error with electronic record keeping
- Create true sensor life-cycle management with complete calibration records, standards management and service history

www.ca.endress.com/CYZ71D

Prosonic FMU30

Ultrasonic level transmitter

Ultrasonic Transmitter for level applications in liquids and bulk solids

- Quick and simple commissioning via four-line plain text display
- Envelope curves on the display for simple diagnosis
- Non-contact measurement method minimizes service requirements

www.ca.endress.com/fmu30

TM41x iTEMP®

Innovative temperature measurement

- QuickSens Insert for the fastest temperature response on the market today (T90<1.5 seconds)
- StronSens Insert for long-term reliability and vibration resistance
- Save time during calibration with the QuickNeck release design
- Stainless Steel construction with IP69K Ingress protection for guaranteed performance on wash-down applications

www.ca.endress.com/TM411

Micropilot FMR5x series

Radar level transmitters

- Hardware and software – IEC 61508 up to SIL3
- Extended temperature range -196...+450°C / -321...+842°F
- Highest reliability with new Multi-Echo Tracking evaluation
- Measuring accuracy up to ±2mm/0.078"
- HistoROM data management concept offers fast and easy setup, maintenance and diagnostics

www.ca.endress.com/fmr52

Smartec CLD18

Compact toroidal conductivity transmitter

- Specially designed for washdown and vibration applications (IP69K)
- Fast response reduces product loss and increases CIP efficiency
- Robust field proven hygienic design reduces unexpected downtime

www.ca.endress.com/CLD18

Prowirl 200

Vortex flowmeter

- HistoROM: secure automated device back up ensures high plant availability
- Heartbeat technology™: continuous self-diagnostics and device verification
- Wet steam alarm for safe and efficient operation of steam systems
- Life-time calibration eliminates errors caused by sensor drift

www.ca.endress.com/vortex

Proline Promag 400

Flowmeter

- HistoROM: secure automated device back-up ensures high plant availability
- Heartbeat Technology™: continuous self-diagnostics and device verification
- Built-in web server for fast and easy device configuration
- Certified corrosion protection for use underground or underwater without modifications

www.ca.endress.com/flow

Update your Talkline subscription:
info@ca.endress.com
Issue 74

Contact

Endress+Hauser
Canada Ltd
1075 Sutton Drive
Burlington, ON L7L 5Z8

Tel: 905 681 9292
1 800 668 3199
Fax: 905 681 9444

Endress+Hauser
Canada Ltée
6800 Côte de Liesse
Suite 100
St-Laurent, QC H4T 2A7

Tél: 514 733 0254
Téléc.: 514 733 2924

Endress+Hauser
Canada Ltd
4th floor, 805 10 Avenue SW
Calgary, AB T2R 0B4

Tel: 403 777 2252
1 888 918 5049
Fax: 403 777 2253

Endress+Hauser
Canada Ltd
9045 22 Avenue SW
Edmonton, AB T6X 0J9

Tel: 780 486 3222
1 888 918 5049
Fax: 780 486 3466

Endress+Hauser

People for Process Automation