



Product Round-Up: Flowmeters (Part 1 of 3)

Multivariable and new-technology flowmeters lead the way

By Jesse Yoder

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Orifice or differential pressure flowmeters have been around since 1910. While that variation remains a key component in the category, technology marches on.

There are three current trends in the worldwide flowmeter market:

- * Multivariable flowmeters
- * New-technology flowmeters
- * More new products that offer enhanced performance

We'll discuss each one in a different segment of this product round-up...though only in the introductory text. The products will be mixed among all three types.

Multivariable flowmeters measure more than one process variable. This trend cuts across product lines, and includes differential pressure (DP), vortex, magnetic, ultrasonic, and Coriolis flowmeters. There are several reasons for this trend.

Users are looking to get more information from the process. By adding a pressure transducer or temperature sensor, such as an RTD, users can get more information without an additional process penetration. Many multivariable flowmeters use this information to compute mass flow.

In most cases, it is more efficient and less expensive to install a single multivariable flowmeter than to install the components separately. For example, the cost of a multivariable DP transmitter is substantially less than the combined cost of a differential pressure transmitter, a pressure transmitter, and a temperature transmitter. While multivariable flowmeters are especially useful for gas and steam flow measurement, they can also be used on liquids.

Following are the latest and greatest on the overall subject from vendors. Because of its size, this round-up will be web-published in three parts. Subsequent installments will come the weeks of Feb. 4 and 11. (This introduction was contributed by Jesse Yoder of Flow Research [<http://www.flowresearch.com>]. Contact him at 781/224-7550 or jesse@flowresearch.com.)



Vortex Loves Fieldbus

The Model 8800C vortex flowmeter is available with the Foundation fieldbus communications protocol, which enables field instrumentation to communicate real-time diagnostics and control information throughout automation systems. Wiring costs are reduced by 60% and installation and maintenance times are reduced by 30-60% compared to traditional transmitters. The 8800C provides superior performance through high-accuracy and ambient-temperature immunity.

Rosemount

800/999-9307 <http://www.Rosemount.com>

Two Beams Are Better Than One

The UFM 500 time-of-flight ultrasonic flowmeter uses a dual-path sensor design that allows the flowmeter to maintain accuracy within 0.5% and repeatability within 0.2% even with highly viscous fluids and at low flow conditions. Measurement is independent of the fluid's pressure, density, and viscosity fluctuations. The flowtube offers obstructionless design for virtually zero pressure drop, matching pipe diameters, and slip-on or butt-weld flange construction. The ultrasonic sensors can be serviced under flow conditions, thus eliminating process downtime.

Krohne

800/FLOWING <http://www.krohne.com>

Radar Does Open Channels



The most common instrument for non-contact open channel flow is an ultrasonic gauge, but pulse radar's microwave energy, unlike sound waves used in ultrasonic measurement, is not affected by steam, mist, or foam generated by the combination of heat and chemicals that exists in some industrial open-channel measurements. A pulse radar gauge can be programmed to output the flow for any type of flume or weir, making it as adaptable as any other technology on the market.

Ohmart/Vega

513/272-0131 <http://www.ohmartvega.com>

Sanitary Accuracy

Sanitary turbine flowmeters provide accuracy within 0.5% and meet 3-A Sanitary Standard No. 28.02 for measurement of process liquids where high sanitary standards are required. The flowmeters are available in 1/4-3 in. sizes covering flowrates from 0.35-650 gpm, supplied with 316 stainless steel tri-clamp end fittings.

Hoffer Flow Controls

800/628-4584 <http://www.hofferflow.com>

Clamp-On Does Gas



The DigitalFlow GC868 clamp-on ultrasonic flowmeter measures gas flow at high or low pressures. It works on up to 36-in. pipes made of any material. Accuracy is 2% of reading with repeatability within 0.5% of reading. No tapping or cutting of the pipe is required and the instrument has no wetted parts. Applications include metering erosive, corrosive, toxic, high-purity, or sterile gases.

Panametrics

800/833-9438 <http://www.panametrics.com>

Excels at Averaging

The Verabar flow sensor measures multiple points along the velocity profile and averages them with a single sensor, resulting in far less stringent straight-run demands than other types of insertion flowmeters. Its differential pressure technology is easily understood and maintained, and can be used for gases, liquids, and steam in pipe or duct sizes from 2 in. to 22 ft. in diameter. The low pressure sensing ports are located on the sides of the sensor and resist plugging in particulate-laden applications. Accuracy is within 1%, repeatability is within 0.1%.

Veris

877/837-4700 <http://www.veris-inc.com>

A Switch and More

The Type 8032 sensor/switch series is designed to switch a valve, relay, or pump and establish an on/off control loop. It measures flowrates from 0.6-30 ft./sec. and has a programmable setpoint that can be set either locally with the three pushbuttons on the display, or externally from a PLC/computer over a 4-20 mA loop or AS-I bus. Output choices are transistor (5-30 VDC, 700 mA) or relay (250 VAC, 3 A or 30 VDC, 3 A). The sensor/switch bodies are available in plastic (PVC, PP, or PVDF), stainless steel, or brass. Wetted parts can be PVDF, ceramic, EPDM, or FPM.



Burkert

949/223-3139 <http://www.burkert-usa.com>.

Safe Flowmeter

CENELEC safety approval has been granted for the Series 454FT single-point insertion thermal convection mass flow transmitter for industrial gases. It has a rugged all-welded thermal sensor, microprocessor, large LCD display, 20 button keypad, and easy-to-use software menus.

Kurz Instruments
800/424-7356 <http://www.kurzinstruments.com>

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