Nice Instrumentation releases new mV vortex flowmeter

A Worldflow Special Report
by Belinda Burum

Nice Instrumentation, a 20-year-old New Jersey-based company specializing in vortex shedding flow measurement, has introduced a multivariable MASS Vortex Flowmeter line for steam, gases, and liquids that includes one of the first low-powered, two-wire, mass flow computers.

Nice Low Profile Insertion Vortex Meter

The new Microtel MASS MTX Vortex Flowmeter line features the company's low-maintenance design with the added accuracy of mass flow compensation, pressure and temperature display. It features internal pressure and temperature measurement and uses 24-bit analog-to-digital technology with high performance microprocessors. The line includes a MASS Flow Vortex Insertion Meter and MASS Flow Vortex In-Line Meter.

The Microtel MASS MTX offers innovations that Nice Instrumentation promises "will take the headache out of multivariable flow instrumentation," including field adjustable 4-20mA span, auto tracking and auto dampening. The operating software tracks instantaneous flow rate while adjusting the auto dampening when a system is up and running at normal operations. This software can record and track violent swings in flow rate while providing the end user with a steady flow rate they can count on during normal operations.

The Microtel MASS MTX was designed from the ground up with both the field technician and end user in mind. The field technician has many choices not available with other multivariable flow instruments. One of the latest innovations is the "in field 4-20mA span adjustment" found in all standard Microtel electronics. This function allows the field technician to adjust the 4mA and 20mA signal from the keypad to zero-out any anomalies found when the signal enters the controller – avoiding time-consuming calls to the controller service team.

The MASS MTX simplifies line changes because it accommodates Nice Instrumentation's full line of vortex insertion designs, from 2" to 48" in diameter, without changes to the meter body or sensors. When a technician increments the line size, all calibration factors within the Microtel electronics auto adjust for the new line size.

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Nice Instrumentation releases new mV vortex flowmeter (Cont.)

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The MASS MTX has been designed for accuracy and high resolution: the Microtel MASS MTX and SMART TX displays rates in six digits with a floating decimal, showing up to four decimals when measuring small flow rates. The totalized flow rate can display up to 10 digits and counts every unit to show the full count of accumulated flow, regardless of the flow rates. (Other manufactures display total in K, losing valuable total data on high flowrates.)

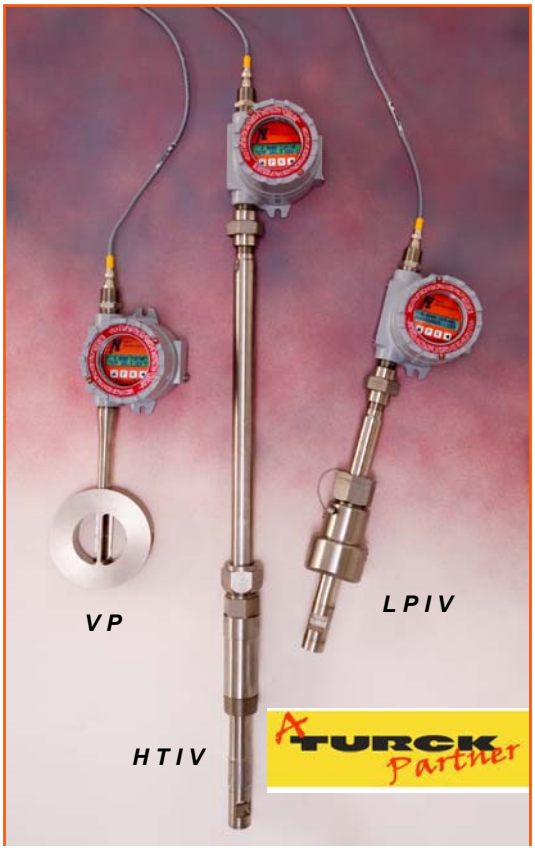
The flowmeter is also designed for low power consumption and easy interoperability. The two-wire, low-powered Microtel MASS MTX can operate in a loop-powered system requires only 14 – 36 VDC.

The Microtel MASS MTX also allows technicians to quickly adjust the time base from seconds, minutes, hours, and even days. Once the technician makes this adjustment, the flowrate instantaneously adjusts and displays the new rate per time base. The Microtel MASS MTX also allows for instantaneous unit changes via the keypad. To change engineering units from liters to gallons or pounds to kilograms etc., the technician only needs to increment the units, and new units will be displayed instantaneously within the display's rate and total.

To further ensure accuracy of the reading, the Microtel MASS MTX is designed to filter out noise from the process flow line, including valves, motors, pumps, pressure reducing stations and even from the process fluid. Special noise-canceling software enables measurement of a clean and clear vortex signal even when the noise is 200 times greater than the amplitude of the vortex signals.

The Microtel MASS MTX Vortex Meter Line is suitable for all process fluid applications with varying pressures and temperatures. Applications include steam mass flow compensation/measurement, gases mass flow compensation/measurement, and liquids Delta-T BTU measurement.

All Nice vortex flowmeters feature dual sensor technology, welded connections, and one-piece elements, with no internal o-rings or seals and no moving parts.



Nice Microtel Mass MTX Vortex Flowmeters

Vortex Flowmeters for liquid, gas, and steam

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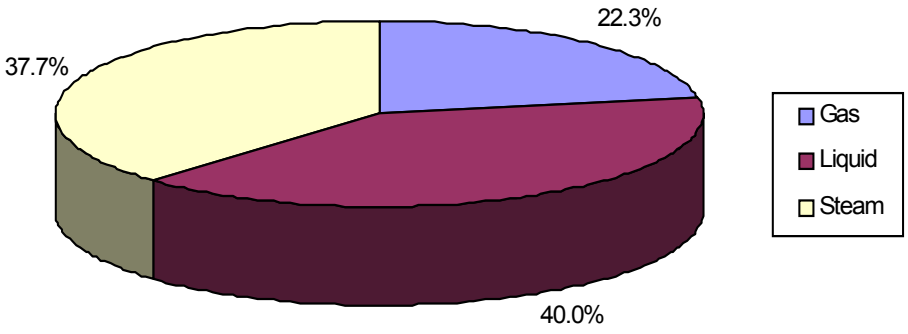
The past five years have seen major product enhancements in the vortex flowmeter segment. One perennial problem with vortex flowmeters has been susceptibility to vibration error. Vibrations in the line can cause a vortex flowmeter to falsely generate a vortex signal or to incorrectly read an existing vortex. Suppliers have responded to issues surrounding vibration by implementing software and electronics, including digital signal processing, that have reduced the susceptibility of vortex meters to interference from vibration.

Vortex flowmeters are the most versatile among the new-technology flowmeters. They can readily measure liquids, steam, and gas. By contrast, magnetic flowmeters cannot measure gas or steam. Coriolis and ultrasonic meters can both measure liquid and gas, but are only recently being used to measure steam. Ultrasonic meters can measure the flow of gases, but are significantly more expensive than vortex meters.

Vortex meters are well suited for steam flow measurement because they can handle the high temperatures and high pressure associated with steam, and because they have wide rangeability. As a result, vortex meters can handle a variety of flowrates when measuring steam flow. Growth of vortex meters in steam flow measurement is projected to be fastest in Europe and Asia, where district heating and power co-generation are increasingly important.

In January 2007, the American Petroleum Institute (API) published a draft standard for the use of vortex flowmeters for custody transfer of liquid, gas, and steam. The lack of industry approvals has been a roadblock to the growth of vortex flowmeters, and the publication of the API standard is expected to spur additional growth in this market.

Types of Fluid Measured Worldwide with Vortex Flowmeters in 2006



Source of Chart: The World Market for Vortex Flowmeters, 3rd Edition published by Flow Research in March 2006