

Flowmeter Measurement Trends in the **WATER INDUSTRY**

By Jesse Yoder. Belinda Burum provided research for this article.

The trend toward new-technology flowmeters is having a major impact on the water and wastewater industry. Now that these newer types of meters are becoming more widely used in the drinking water industry, the American Water Works Association (AWWA) is developing standards,

according to Paul Olson, standards engineer for the organization.

Standards for ultrasonic transit time flowmeters are expected by the end of this summer, with standards for magnetic and Venturi differential pressure flowmeters expected in the second half of 2004. Standards will involve such concerns as accuracy, construction,

testing, verification and how the meters should be shipped and stored. The standards are primarily intended for custody transfer applications.

Minimum requirements — which already exist for positive displacement, turbine and propeller-type flowmeters — are expected to be more demanding for the newer styles.

“Technology has matured to a level where electronic meters are used a great deal more than they were in the past by our industry,” according to Olson. “The technology has improved and manufacturers have been able to make them more cost competitive with the turbine type meters that utilities used before.”

The electronic meters are used primarily for raw water — bulk water, including measurements in water treatment plants, rather than residences. Other types of meters for which standards already exist include compound, fire service, multi-jet and single jet meters. A new standard is also under development for fluid oscillator meters, a type of jet meter. This standard is not expected until early 2005.

The standards help utilities in selecting meters and help manufacturers know what the user wants, according to Olson. So far, there have been no standards developed for Coriolis flowmeters, although there has been discussion about forming a Coriolis committee. AWWA standards are main-

ly used in the United States, Canada and Mexico, although they are also used in other countries as well. In Europe, ISO standards prevail.

Trend Toward Automation

Concern about security following Sept. 11 “hasn’t directly affected the meters a whole lot,” according to Olson. Coincidentally, the water industry had started to address security in early 2001, so it was somewhat prepared for the increase in security requirements following the attack.

There has been a general move over the last 10 years toward more automation of the water industry — i.e., more remote monitoring and computer controlled devices such as SCADA and Utilities Communications Architecture (UCA), said Olson.

Automation is driven by technological improvements as well as the need for higher efficiency. “These devices can save time and money for treatment plants,” said Olson, who believes the trend is “pretty steady” today.

Capital spending was the same or a lit-

Chart 1 Flowmeters Sales in 2002 Water & Wastewater

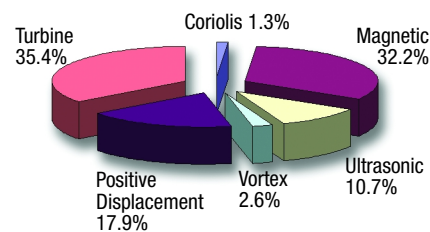


Chart 2 Flowmeters Sales in 2007 Water & Wastewater

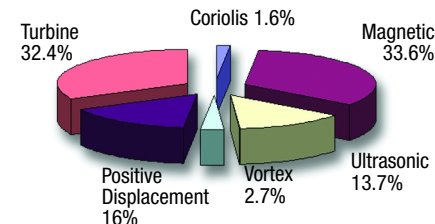


Chart 1 does not include differential pressure, open channel, thermal or variable area flowmeters.

Chart 2 does not include differential pressure, open channel, thermal or variable area flowmeters.

tle bit down in 2002. Public utilities trail the economy by three to six months, according to Olson. Some 85-90 percent of the water utilities are private.

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Flowmeters Used in the Water and Wastewater Industry

The following charts show the differing percentage of sales of most of the aforementioned types of flowmeters sold into the water and wastewater industry. Differential pressure, open channel, thermal and variable area flowmeters are not included. Chart 1 shows the percentage of sales of flowmeters in water and wastewater by type in 2002. Chart 2 shows the projected sales of flowmeters by type into water and wastewater in 2007. Both charts refer to revenues from these meters, and both represent sales worldwide.

It is clear from these charts that new-technology flowmeters (Coriolis, magnetic, ultrasonic and vortex) are showing faster growth than the more traditional turbine and positive displacement meters. On the other hand, sales of the traditional meters are so large that they will continue to account for a substantial percent of total flowmeter sales into the water and wastewater industry, even by 2007. For example, sales of turbine flowmeters are projected to account for one-third of revenues from these types of flowmeters in 2007, on a worldwide basis.

With all the attention being paid to Coriolis flowmeters, why do Coriolis flowmeters account for such a small percentage of the total? This is mainly because water is a less valuable commodity, when compared to many chemicals and to hydrocarbons. End users are less willing to pay the higher prices for Coriolis flowmeters to measure water. The strongest industry for Coriolis flowmeters is the chemical industry. Magnetic flowmeters are the meter of choice among new-technology meters for the water and wastewater industry.

About the Author

Dr. Jesse Yoder is president of Flow Research, which he founded in 1998. He has been a writer and analyst in process control since 1986. Dr. Yoder has written over 40 market studies and is currently completing a 12-volume series of studies on the worldwide flowmeter market. Included in this series is The World Market for Flowmeters, which includes all flow technologies. Flow Research (www.flowresearch.com) offers a quarterly update service called the Worldflow Monitoring Service. Dr. Yoder can be reached by phone at 781 245-3200 or by e-mail at jesse@flowresearch.com.

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