

Market watch

Survey



Measurement
in the

OIL & GAS Industries

Survey
Reveals
Consistency
in Flowmeter
Selection

By Jesse Yoder

This month we present the results of a survey of flowmeter end-users involved in oil and gas production. This survey has some interesting results including the following:

- Over 25 percent of the measurements made in oil and gas production are of natural gas. This helps account for the popularity of flowmeters that measure natural gas in this industry.
- The vast majority of flow measurements in oil and gas production are for volumetric flow as opposed to mass flow. Our survey shows that 86 percent of measurements are for volumetric flow.
- Orifice plates are still the most popular primary element out there. Seventy percent of end-users with primary elements say they are using orifice plates.
- In terms of accuracy, 72 percent of end-users require accuracy values of plus or minus one percent. While this is lower than the average for all industries, it is still a high value. It shows that flowmeters with low accuracy capabilities will have a difficult time competing in this industry.
- Some 80 percent of users surveyed say they would not pay more for a higher degree of accuracy, while 16 percent say they would. This suggests that the large majority of end-users are satisfied with the accuracy values they are getting, while one-sixth are willing to pay more for higher accuracy.
- Close to three-quarters of users say they have not switched flowmeter technologies in the past two years. This reinforces the importance of installed base in flowmeter selection. Still, with over one-fourth saying they have, there is a significant amount of technology change going on in the oil and gas industry.

While ultrasonic flowmeters did not show up in our survey, the most-used flowmeters in oil and gas production are differential pressure (DP), turbine, positive displacement (PD) and ultrasonic. The use of ultrasonic flowmeters for custody transfer of natural gas has been growing since June 1998, when the American Gas Association (AGA) published AGA-9, a report that laid out criteria for using ultrasonic flowmeters for custody transfer of natural gas. Instromet and Emerson Daniel are the leading suppliers of ultrasonic flowmeters to this market, and FMC Measurement has also entered this market in the past several years.

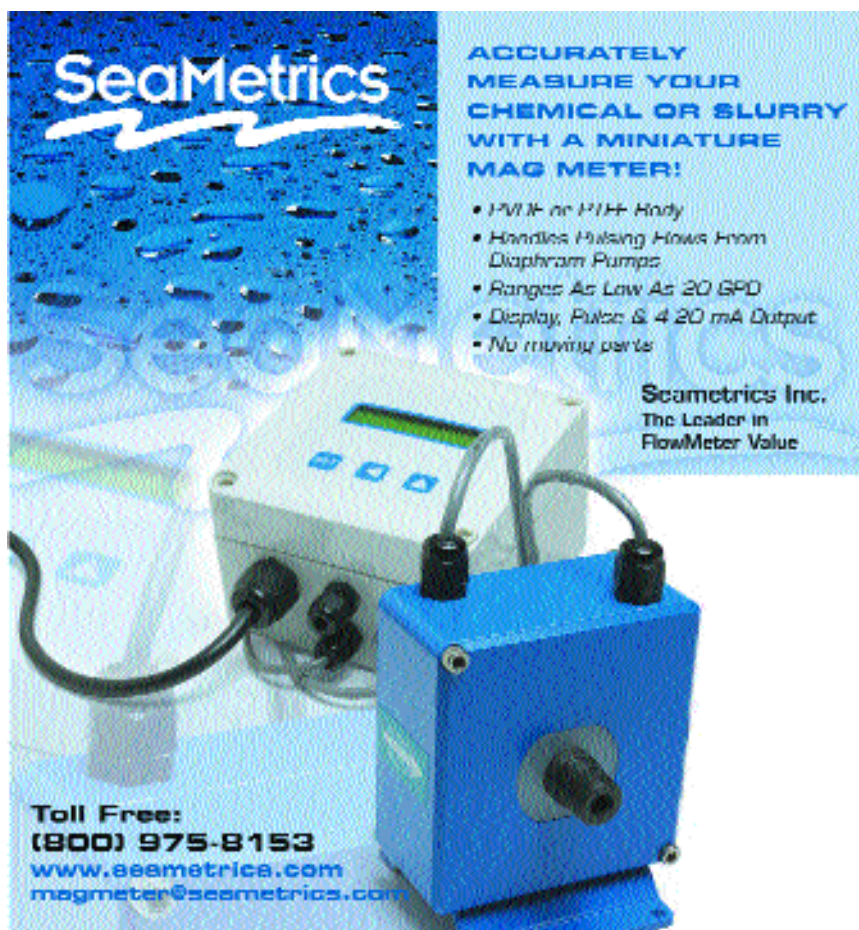
Ultrasonic flowmeters are widely used in the oil and gas production industry. Coriolis meters are beginning to be used, although they have line size limitations. Magnetic flowmeters have limited use in this industry, because hydrocarbons are not conductive. Vortex flowmeters have made a limited impression in the

oil and gas production environment.

Positive displacement meters are widely used for custody transfer of liquid hydrocarbons to and from airplanes, rail cars, and trucks. Turbine meters still are widely used to measure the flow of natural gas. And differential pressure meters are still the most widely used meter in oil and gas production.

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. You can contact Dr. Yoder by phone at 781 245-3200 or by e-mail at jesse@flowresearch.com.



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