Vortex Meters Tap Information Mother Lode

Bob Waterbury, Senior Editor

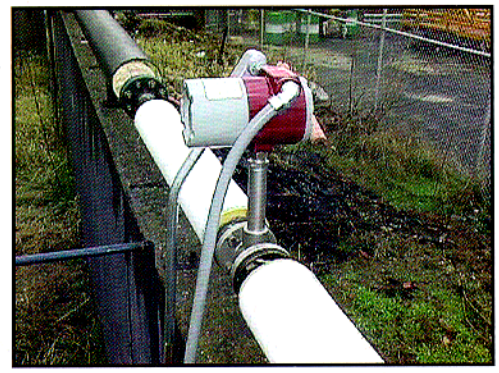
The adage, "You can't control what you can't measure," is nowhere so true as in the process control industries. Going one step further, it is also necessary to ensure accuracy and repeatability in measurements. And, while you're at it, it is also nice if the measurement device is economical and flexible enough to cover diverse applications without major modifications.

That description certainly applies to the Innova line of vortex flowmeters and multivariable vortex mass flowmeters from Sierra Instruments Inc., Monterey, Calif. The vortex flowmeter provides flow measurement of gases, liquids, and steam using a piezoelectric sensor that cancels out extraneous vibrations. It provides outputs for five process variables including mass flowrate, volumetric flowrate, temperature, pressure, and fluid density. And it does all this from a single entry point into the system.

The Bristol Meyers Squibb (BMS) complex in New Brunswick, N.J., encompasses 29 major buildings spread across more than 100 acres. "We operate a major electricity and steam cogeneration plant here," says Ron Weller, BMS energy engineer. "Steam production is controlled with great accuracy because we are required to maintain 125 lbs. of steam pressure at all times. But until last year we never had a way to measure actual steam usage in our campus buildings. That's when we inserted 26 new Model 220/Innova volumetric vortex meters into our lines. This allows us to read actual steam usage at the cogeneration boiler as well as the buildings."

Eventually, BMS plans to tie the meters into a computer-controlled system so readings can be accessed at any time from a central control location. Now for the first time, however, they have access to new data such as consumption location and type, frequency, and usage peaks that can help them clean up the environment and reduce operating expenses.

"The ease and economy of installation coupled with a 30:1 turndown ratio also sold us on equipping all of our new buildings with the vortex meters," says Weller. "And Square D Power Logic systems in the existing buildings allow us to easily integrate the meters into a central computer network in the future."



BOTH END USERS AND SYSTEM INTEGRATORS SAY INSTALLATIONS OF SIERRA INSTRUMENTS' MODEL 220/INNOVA MULTIVARIABLE VORTEX MASS FLOWMETERS ARE EASY AND ECONOMICAL.

Steve Kraemer is the instrumentation supervisor at Ergon Refining, a Vicksburg, Miss., manufacturer of various specialty lubricants. The plant is using the mass flowmeters in three dry-air applications. "Originally, we installed two in our refinery," says Kraemer, "and then we added one more at our lube cell and distribution tank farm. We use them to monitor airflow and usage. Recently, we used them to collect data that helped us select the correct air compressor as part of an upgrade project. It helped us analyze our volumetric requirements in order to specify the right size compressor and performance capabilities. Best of all, it was economical because it didn't require a lot of piping modifications. Before, we couldn't even measure airflow."

Bob Seiman, plant engineer at Lion Brewery, Wilkes-Barre, Pa., uses the flowmeters to determine the rate and daily/weekly totals of carbon dioxide used in its carbonic systems. This information is used not only for troubleshooting, but for tracking usage to ensure that it is not excessive.

"Right now we use the devices as standalone rate meters and totalizers," says Seiman, "but later we hope to use them as part of a feedback loop into the production process itself. With a 4-20 mA signal, we can use the meters to verify carbon dioxide temperature, pressure, mass flow, and volumetric flow. Plus, we can tie it all into the plant utility network that actually controls carbon dioxide injection."

Lion Brewery has been using the meters only since January 2000, but Seiman says that performance has been excellent. "They are very easy and economical to install, and have given us absolutely no problems."

Walt Shubilla, applications engineer with Carbonic Systems, Elmira, N.Y., was instrumental in installing the meters at Lion Brewery. "As OEMs and suppliers, we recommend Innova meters to all of our customers in the dairy, brewery, and pollution-control industries—wherever pH adjustment and gas and liquid flow monitoring are required. They provide a wealth of information and are easy and economical to install and operate. Users like the meters because they help them spot leaks, track process trends, and improve operating variables. In many cases they help fine-tune processes without overdosing—especially in carbonic and pH control applications. And the computer connections are ideal for integrating them into real-time process feedback."

For more information, call 800/866-0200 or see www.sierrainstruments.com