

Foxboro Pressure Transmitters

Intelligent transmitters help coal plant reduce costs and improve performance

Summary

Foxboro pressure transmitters combine field-proven, reliable silicon strain-gauge sensor technology with simplified, durable packaging. The Foxboro pressure transmitter family covers a broad range of pressure and level uses; including differential, gauge, and absolute pressure, as well as remote seal flanged level.

Business Value

Foxboro digital transmitters flexible mounting configurations and low-profile structures offer superior performance for an easier and less expensive installation. Improving performance, reducing maintenance and long-term operating costs allows for greater boiler production efficiency.



About Foxboro Pressure Transmitters

Foxboro® pressure transmitters combine field-proven, reliable silicon strain-gauge sensor technology with simplified, durable packaging. The Foxboro pressure transmitter family covers a broad range of pressure and level uses; including differential, gauge, and absolute pressure, as well as remote seal flanged level. Each pressure transmitter uses the same innovative topworks packaging with modular intelligent electronics, which greatly simplifies installation, operation, servicing, and spare parts requirements.

Benefits

- Reduced maintenance and long-term operating costs
- Improved performance for greater production efficiency
- Faster and less frequent calibration
- Flexible mounting configuration for easier, less expensive installation
- Rapid product delivery for on-time completion of scheduled procedures

Technical Challenge

Effective, profitable power plant operation requires managing capital-expense turbine, boiler, and combustion equipment, along with many other assets that must be precisely balanced. Reliable readings of pressure, temperature, and other process variables are critical to success.

While analog transmitters are known for accuracy and reliability, maintenance costs increase with age, and flexibility for performance improvement is limited. To reduce long-term operating costs and maintain quality service to more than 300,000 customers, a Michigan power utility launched a program to replace its aging analog transmitters with modern digital models.

The utility uses transmitters for draft indications on the boiler and pulverized mill area. They read pressure on the boiler and the turbine as well as combustion and steam heating equipment. Some of the instruments send data to a centralized distributed control system (DCS), which manages the set points that control the sensitive interactions. Other instruments simply indicate various pressure states to operators and maintenance technicians.

When this power utility implemented its first DCS, all transmitters were analog. At the time, mixing and matching multiple brands of analog sensors was difficult, and in some cases impossible, due to proprietary mounting configurations. Managers at this Michigan power plant wanted to be certain that they selected a digital sensor that would not lock them into a single vendor.

The Foxboro Solution

After evaluating transmitter suppliers, the utility selected Foxboro intelligent instrumentation with standard mounting configurations. Foxboro's ability to guarantee quick delivery further supported the decision to purchase Foxboro transmitters.

Thus far, Foxboro has supplied differential pressure and gauge pressure transmitters to the power plant. The Foxboro IDP10 is an intelligent two-wire differential pressure transmitter with high-performance accuracy to ± 0.05 percent of calibrated span. The IDP10 provides measurement spans of 0.12 to 21000 kPa (0.018 to 3000 psi), which expands its versatility so that a single transmitter can satisfy nearly all DP applications. The Foxboro IGP10 is a two-wire transmitter for high-gauge-pressure applications to 52, 105, or 310 MPa (7500, 15000, or 30000 psi). Gauge pressure measurement spans may be as low as 0.12 kPa (0.5 in H₂O) or as high as 35 MPa (5000 psi).

The Foxboro IDP10 and IGP10 pressure transmitters are available with 4 to 20 mA analog output, as well as HART, FOUNDATION Fieldbus, PROFIBUS, and FoxCom communications protocol compatibility. These transmitters are also available with industry-standard mounting configurations that make it easier and less expensive to replace existing transmitters and reuse existing installation designs without being limited to a single supplier, and are backed with an industry-leading 5-year warranty.

Ease of calibration is another major benefit that the power utility receives, since the Foxboro digital transmitters can be calibrated by using the push buttons either on the digital transmitter's LCD, a handheld communicator, or a notebook/desktop computer; and can be calibrated from the operator station of the DCS.

Results

The Foxboro transmitters standard mounting configuration, which serves as a universal replacement for all competitive models, allows the power utility to change transmitters without having to replace the entire manifold. Likewise, if utility personnel need to replace a transmitter and do not have the primary vendor's product available, they now have the flexibility to use another brand.

The power utility has also realized increased productivity resulting from less calibration. With analog gauges, calibration was frequent and time-consuming. The digital transmitters require calibration considerably less often; which is normally completed during forced outages.

The ease of making routine calibrations has had a true preventive maintenance benefit. By being able to check and correct calibration on every instrument during a shutdown, plant operators are more confident that all instruments will be operating at peak performance once the system starts up.

The utility has also benefited from rapid Foxboro order fulfillment. To take advantage of a scheduled shutdown, utility managers needed the first 90 transmitters within 4 days. Foxboro and the local representative was committed to meeting their immediate deadline — and delivered on their promise. Last year, the utility installed an additional 90 or so transmitters; timing was even more of an issue. Foxboro came through once again.

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