

Hanover Compressor Company

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“Invensys really pulled out the stops to work with us and even worked with their supplier of seals to expedite delivery to accommodate our timeframe. They truly came through as a strong link in our supply chain.”

Scott Pickens,
Electrical Engineer,
Hanover Compressor Company

Foxboro Performs under Pressure to Provide Transmitters in Eleventh Hour for Energy Equipment Maker

by Invensys Operations Management

Goals

- Complete and ship order request before deadline date;
- Quickly install new pressure transmitters.

Challenges

- Install new custom pressure transmitters to complete and ship a multi-million dollar international order before the deadline date, while avoiding substantial penalties.

Solutions and Products

- Foxboro Measurement & Instruments.

Results

- Allowed on-time delivery of multi-million dollar international order;
- Avoided substantial missed-deadline penalty;
- Offered immediate solution to product delivery crises;
- Provided single-source for custom specified pressure transmitters;
- Strengthened company reputation for on-time, on-budget delivery.

Broken Arrow, Oklahoma – The Hanover Compressor Company is a global market leader in full service natural gas compression and a leading provider of service, fabrication and equipment for oil and natural gas processing and transportation applications.

Founded in 1990 and a public company since 1997, Hanover's customers include both major and independent oil and gas producers and distributors, as well as national oil and gas companies.

Completing the Order

A supply chain is only as strong as its weakest link. If that single link holds up a multi-million dollar order, it can result in higher production costs, penalty charges for late delivery, and even loss of order, all of which impact profitability and reputation. An international manufacturer of gas processing systems faced all of these scenarios when a new supplier of a key component failed to deliver just days before a major order was to ship.

The Hanover Company is a global market leader in designing, fabricating and delivering custom equipment for oil and natural gas processing. One such system is a sulfur recovery unit (SRU), an emissions control system that eliminates or reduces sulfur dioxide (SO₂) emissions.

Designed for use in oil fields, the SRU partially oxidizes hydrogen sulfide to produce elemental sulfur for disposal as a solid, as compared to the full oxidation product, which produces gaseous SO₂. This reaction in combination with several stages of separation, reheating and catalytic conversion produces a final off-gas that complies with emissions regulations, thus eliminating pollution resulting from flaring of by-product hydrogen sulfide associated with petroleum.

As a fabricator, Hanover's Broken Arrow, Oklahoma, facility works closely with its supply chain of vendors for critical components ranging from control systems to flow loop instrumentation. While Hanover is ultimately responsible for the SRU, it is a team effort whose success relies on every component being delivered on time and to specification.

For the application, Hanover required more than 60 differential pressure (DP) transmitters as a critical component of the flow loop system to maintain the pressures and flows required for peak performance.

"We reviewed proposals and selected a vendor based on an extremely competitive package they offered that included attractive pricing. However, as it turned out, they could not meet the promised delivery date, which left us in a very precarious position. At the eleventh-hour we had to recall vendors and see whom, if anyone could deliver DP transmitters that met our stringent requirements, at a competitive price, within our tight timeframe. This was a time for Superman," said Scott Pickens, Electrical Engineer.

Quick Transmitter Implementation

Having used the Foxboro DP transmitters extensively in the past, Scott Pickens contacted the local Foxboro representative, the Canada Company to discuss the situation.

Pickens said *"They provided a solution that at first I had a tough time believing. I had to be certain of meeting this delivery date, and there was no margin for error."*

He contacted the folks at Canada Company on Monday, May 23rd to review their original proposal submitted back in March. Invensys Operations Management was closed that Monday, but got back to the Canada Company first thing Tuesday. This immediate response allowed the Canada Company to close



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the deal and secure a verbal order from Hanover by Tuesday afternoon.

"While I was impressed with the Invensys response time, it was nothing compared to their lightning delivery," commented Pickens. "We consummated the deal on Tuesday and product started showing up on Thursday. By Friday, 90 percent of the order was on site. Even I didn't expect delivery that promptly."

The Foxboro pressure transmitters selected for this application were the IDP10 differential transmitter and the IGP10 gage pressure transmitter.

Both are intelligent two-wire transmitters and feature silicone strain gage sensors that have proven themselves in thousands of field applications.

For high reliability performance, the Foxboro transmitters include proprietary sensor packaging with very few parts.

Each transmits a 4 to 20 mA output signal and includes HART protocol for remote configuration.



Foxboro pressure transmitters.

On Time Delivery

Timely delivery of the pressure transmitters allowed Pickens to complete the instrumentation and electronics portion of the SRU, just under deadline, which allowed Hanover to meet its promised delivery deadline.

According to Pickens "Given that the system was going to Bulgaria, we had to allow for shipping, which was no problem. The system arrived on time and fired up right on schedule."

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