



TOBACCO COMPANY INCREASES ENERGY EFFICIENCY WITH ROSEMOUNT™ FLOW METERS AND EMERSON™ SMART WIRELESS COMMUNICATION

Application

Tobacco processing, requiring humidification at controlled conditions

Customer

Large international tobacco company

Challenge

To process tobacco, the customer uses several flow meters to monitor energy consumption, including vortex meters for steam and compressed air and magnetic flow meters for water. A considerable amount of energy is used in their facility to produce both hot water and steam.

Monitoring and measuring consumption is essential to the customer as it represents one of their highest production costs. Under a continuous improvement strategy, the customer wished to improve their energy efficiency and optimize energy consumption. They were also interested in reducing maintenance issues and costs associated with their cables and implementing a new solution that communicated through wireless protocols.

The customer regularly produces reports to help each department understand how energy is being used and possible areas for future improvement. All data is transferred to a web-based energy monitoring system embedded into the company's intranet for personnel to view. The system is designed to gather all energy consumption data, including that related to electric energy, steam, heating gases, process gases, and water.

Flow meters represent an essential part of this program, as the measurement of water and gases is required for creating a full picture of the company's overall energy consumption. They wanted to increase their measurement accuracy to become more efficient and optimize energy usage.

Results

- 100% reliability of meters
- Projected 1% annual energy efficiency increase
- Higher reliability of wireless communication than cables
- Comprehensive solution including flow meters and wireless technology for more accurate energy consumption monitoring

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“Wireless is, for us, the best way to transmit data. If we move the transmitters, we do not have to perform any reconfiguration. Easy to mount, install, and change. It means full flexibility.”

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Project Engineer

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Solution

Emerson was invited to propose a solution that included several flow meters and wireless connection capabilities. The invitation came because of Emerson's extensive knowledge and experience in energy management and efficiency. The solution was comprised of 11 Rosemount 8800 Vortex Flow Meters and six Rosemount 8705 Magnetic Flow Meters with wireless connections. It also included 25 Smart Wireless THUM™ Adapters to connect to 25 existing meters from other manufacturers, two redundant 1420 Smart Wireless Gateways, and repeaters for long-distance communication.

The customer needed a wireless solution that was easy to implement, use, and maintain. Emerson delivered on these requests and provided full support during all phases of the project. Additionally, the connection of the THUM Adapters to the existing meters offered an easy "plug-and-play" solution resulting in reduced installation and setup time.

In relation to steam, the Rosemount 8800 Vortex Flow Meters have allowed the customer to increase their measurement accuracy and compare their consumption against the natural gas bill, allowing them to optimize the output of a 4MWt utility plant. The installed Rosemount Magnetic Flow Meters have also been used to analyze how hot water is consumed, allowing the customer to start an optimization campaign. Additionally, Rosemount Magnetic and Vortex Flow Meters require no maintenance, which has reduced operation costs.

Overall, the Emerson Smart Wireless solution was very easy to install, use, and has been proven to be 100% reliable. No data has been lost during the first six months of operation, demonstrating increased dependability over the previous cable system. The customer has not yet quantified the outcome of energy efficiency programs, but thanks to the Emerson solution, believes that future operation efficiency will be improved by 1% annually.



"Thanks to the Emerson solution we believe that we will increase our efficiency by 1% annually."



Project Engineer

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