

Bodycote Improves Gas Consumption Monitoring and Cuts Costs with Honeywell Wireless Solution



“With Honeywell’s wireless solution Bodycote is able to access reliable (real-time) furnace data that confirms utilization rates on equipment to better manage scheduling and costs. The data has been eye-opening to assist in understanding how much natural gas has been consumed for each furnace load. The information has provided the knowledge to understand the cost before the furnace door is closed-- saving time and money and most importantly improving efficiency to service the customer.”

Ron Perkins, General Manager, Bodycote

Benefits

As one of the leaders in heat treatments, Bodycote wanted to obtain a better understanding of its gas consumption and heat usage at its Ohio plant and find a way to help cut costs and improve efficiency. In order to maintain its leadership status, Bodycote sought a solution to provide this information and more efficiently run its plant, as well as better service its customers in the auto and aerospace market segments.

Working with Honeywell and system integrator, Loy Instruments Inc., Bodycote implemented a unique wireless solution to help monitor its four furnaces onsite. As part of the project Bodycote wanted to obtain information such as the furnace total gas usage per load, furnace efficiency, plant utility cost and heat treat area gas usage total as compared to the facility total.

Honeywell’s Wireless DP Transmitters were installed on each of the four main gas lines which enabled Bodycote to:

- Better understand associated costs to run specific products in its furnaces providing a better handle on margins and costs to be more competitive
- Develop a baseline for future plant improvements and proactive maintenance
- Improve reliability of gas usage and cost data displaying confidence in the data they are getting
- Improve efficiency and use of four furnaces thanks to increased data analysis
- Support safety through remote monitoring of furnaces



Bodycote’s heating plant uses Honeywell wireless technology to obtain needed information to monitor gas consumption

Background

Bodycote is the world’s largest and most respected supplier of Testing and Thermal Processing services, including Materials Testing, Health Sciences, Engineering and Technology, Environmental, Measurement Solutions, Heat Treatments & Metal Joining, Hot Isostatic Pressing and Metallurgical Coatings.

Thanks to Bodycote’s policy of investment in leading-edge technologies, organic growth and acquisitions, manufacturers are attracted to the cost and efficiency benefits accruing from the Group’s extensive resources. Customers can then concentrate their resources into core activities, with confidence in their ability to continue to satisfy international market requirements. The

World's most respected and innovative engineering companies are realizing the benefits of long term relationships with Bodycote – giving them access to the wealth of knowledge and expertise of the Group's interactive metallurgical services, spanning over 300 facilities in 30 locations.

Challenge

The Bodycote facility in Cleveland Ohio wanted to improve its ability to measure its gas consumption and heat usage from its four furnaces, and find a way to help cut costs and improve efficiency. Bodycote wanted to find a solution that would provide more accurate measurements in a timely manner and help increase plant efficiency.

"We knew what the total gas consumption was for the plant, but we had no way of understanding just how much gas we were actually using per furnace load," said Ron Perkins, General Manager, Bodycote. "Once we could grasp what our actual energy consumption was, we could clearly see and determine utilization rates to help us better manage costs and increase the plant's profitability."

Solution

Bodycote was already a customer of Honeywell and was familiar with their products and services. With support from both Honeywell and its partner, Loy Instruments Inc., a well experienced provider servicing the design and process control market, Bodycote decided to embark on a three month monitoring project to understand how it could better track its gas consumption and act on that information as needed.

After a review of Honeywell's technology, wireless seemed to

More Information

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offer the best fit. As the first major process control supplier to offer industrial wireless sensors to the market, Honeywell is an expert in industrial wireless applications that reduce costs, and improve safety, reliability and productivity.

The Bodycote facility in Cleveland, Ohio has 4 IQ furnaces with about 2-3 Mbtu capacity each. Working hand in hand with Perkins, Honeywell and Loy Instruments Inc., helped define parameters of the application and information that needed to be obtained including:

- Furnace total gas usage per load
- Furnace efficiency (between surface and AFC)
- Plant utility costs
- Heat treat area gas usage as compared to facility use

Honeywell Wireless DP Transmitters ranged 0-100" H2O were installed on each of the four furnaces main gas lines. The transmitters measure the DP across orifice assemblies provided by Imperial. The DP transmitters send the signal back to the base radio which is then connected to a Honeywell QXe recorder through the quad analog output module. The transmitters are sensing the actual CfH, as well as totalizing Cf per second, using four virtual pens.

"We are now confident in the data we are getting and can use this to move forward with future process improvements," continued Perkins. "After monitoring and finding out which furnace performed the best, we are now able to be proactive and improve the other three to get their efficiency up and costs controlled – which turns into better service and cost-effective products for our customers."

With an on-time and on-budget project, Honeywell and Loy provided needed results to continue to improve the Bodycote facility. Results included the following:

- Accurate monthly gas usage reporting on heat treat area to corporate
- Cost analysis on parts heat treated
- Furnace efficiency
- Assist in scheduling furnace preventive maintenance

"In the future we plan to incorporate a data acquisition software program to pull reports by furnace and have gas and electric consumption results all on one spreadsheet – populated by Honeywell's wireless technology," concluded Perkins.