ENERGY MANAGEMENT
COMPRESSED AIR AND GAS

Kurz Insertion Mass Flow Meters provide precise monitoring for compressed air and gas applications resulting in increased efficiency and decreased overall operating costs

KURZ INSTRUMENTS INC.™

complex technology
MADE SIMPLE

Energy Management: Compressed Air and Gas

Benefits of the Kurz Solution

- *Contributes to Electrical Energy Cost Savings*
- *Increased Longevity to Compressors and Components*
- *Minimize Wear and Tear on the Overall System*
- *Maximize Usage of Compressed Air & Gas*
- *Greater Consistency and Higher Quality Product Application*

Compressed Air and Gas Overview

Many commercial, industrial, educational and medical facilities use compressed air and gas for a variety of applications. These applications include cleaning systems, pneumatic tools, pneumatic transportation of materials, paint and coating, bottle manufacturing and capping, product driers and packaging, to name just a few. Compressed air and gas offers a number of advantages. It is readily available and is easily stored and transported. Control is accomplished through simple on-off methods and the pneumatic systems tend to have long operating lifetimes and require little maintenance.

But the ease of use and access to compressed gas is not without challenges. The compressors used in the process require large amounts of electrical energy to operate and in fact, it is estimated that 10% of all electricity used by industry is used to produce compressed air. Additional costs are required for equipment maintenance of the compressor, regulators and water traps in the piping itself. Also, the massive weave of compressed gas delivery lines throughout large facilities offer many opportunities for leaks along the piping network, forcing compressors to work harder and use more electricity. The need therefore, to monitor and manage compressed gas applications is a key area to decreasing operational and energy costs, which can be substantial in large facilities.

Customer Application and Performance Issues

A large auto manufacturer with over 40 plants in North America used compressed air within their electrically operated painting coves. A robotic paint spray gun was used, in which an electric potential difference is established between the atomized paint particles and the auto body frame being sprayed. As a result, the paint particles are attracted to the frame, thereby providing a quality paint finish. Surface optics and body paint quality are critically dependent on the precise ratio of the compressed air and paint to apply a consistent coat of paint to the frame. Too much air or too much paint is not a large problem when painting a single car, but in plants that are painting thousands of cars in 40 different plants at one time, losses can add up.

The Kurz Solution

Kurz 454FTB and 504FTB Insertion Mass Flow Meters were installed immediately off the air compressor tanks. The flow meters were used to measure, monitor and control the flow for the entire system. The system was established to monitor and track the gas usage for different departments in order to make comparisons between departments, and identify any unusual amount of paint or air usage.

Compressors are used to feed a constant flow of compressed gas, usually air to the entire network of pneumatic tools and operations within the factory

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The system was monitored 24/7 for baseline data that included the ratio of paint to the number of cars being painted. Using measurement data and productivity trends, the company was able to reduce the amount of paint being used in the process saving tens of thousands of dollars.

In addition, systematic shutoff of the engine lines helped track leaks throughout the entire pipeline and the sensitivity of the Kurz meters assisted with locating large and small leaks along the line. As a result, not only was there a cost savings in paint, but the Kurz Mass Flow Meters also allowed the company to identify leaks within the system, saving electricity and preventing catastrophic system failures.

Performance Results with the Kurz Solution

As a direct result of the Kurz Mass Flow Meter installation, the company immediately realized savings in their electrical energy costs. They were able to step down their compressors and still deliver the same amount of gas to their paint lines. They also realized cost savings in the amount of paint they used at their plants, while maintaining greater consistency and increased product quality.

The results and cost savings in this feature application are consistent with many other installations for compressed air and gas monitoring. For example, another large equipment manufacturer realized "six figure" savings annually by the installation of Kurz 454FTB Insertion Thermal Mass Flow Transmitters to monitor and control their compressed air systems. These are impressive ROI figures for essential commercial and industrial processes.

About Kurz Instruments

Kurz Instruments is the industry leader for designing and manufacturing Thermal Mass Flow Transmitters for industrial air and gas flow applications. Kurz products are used in a wide variety of industrial applications including combustion air, aeration air and digester gas, nuclear power plants, pump protection, flare stack monitoring and compressed air, to name only a few.

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