

Major Energy Savings in Consumer Goods Manufacturing Using Floor to Cloud™ Solution

RESULTS

- Helps reduce compressed air consumption by a projected 22%
- System enables continuous visualization of air consumption for early leak detection, ongoing energy management, and process improvement
- Comparative analysis of production lines to derive applicable best practices
- Both hardware and software will allow upscaling of monitoring capabilities to over 38 locations



APPLICATION

Energy consumption monitoring and compressed air leakage reduction.

CUSTOMER

A major global consumer products company.

CHALLENGE

A large global consumer packaged goods manufacturer was striving to reduce energy consumption and pursue a net zero carbon target with a compressed air monitoring solution. The use and leakage of compressed air in packaging processes is an area with a substantial energy footprint, so the company needed continuous air flow monitoring to achieve its energy reduction goals. The new monitoring system required sensors, automation, visualization and a reporting system to provide the location, time and date where excessive air was being consumed.

The manufacturer had several challenges in implementing an energy monitoring solution. First, most inline sensors do not have real-time clocks, so there is no clarity on timing of an occurrence of a particular event. Second, all the consumption data needed to be converted to the communications protocol of the existing historian software. In addition, the company needed a solution that could scale to its 38 global manufacturing centers with a single central monitoring and control system. Finally, the company required a supplier that understood packaging processes and could advise on how to develop operator dashboards and reports that would be meaningful, easy to use and customizable.

Monitoring compressed air and improving efficiency made a significant contribution to the manufacturer's efforts to reduce its carbon footprint.



SOLUTION

The company selected Emerson because of its expertise in all areas of the required system technologies. Emerson developed an integrated solution that included the AVENTICS™ smart flow sensors, compact PACSystems™ edge computing industrial PCs, the highly flexible Connext™ OPC UA server, and the easy-to-use PACEdge™ software.

The manufacturer first experimented with custom historian scripting to correct the time/date issue, but determined that it needed a more flexible, scalable solution. Connext platform on a PACSystems RXi2-BP industrial PC was able to “contextualize” the sensor data by adding date and time information to every record. The software was then able to transmit the complete data in a format that the historian could read and ultimately display at each line and plant, as well as at a central control room.

The company is using the PACEdge software suite to visualize the air flow and power consumption. Emerson developed a personalized dashboard that can be viewed locally or remotely to aid in the energy reduction analysis.

The compressed air monitoring data is analyzed to highlight the best-performing (lowest usage) machines, packaging lines and facilities, allowing best practices to be shared across the facilities and with machine builders to minimize air usage. The system can also alert operations if there is air flow to a machine that is currently idle. In addition to finding leaks, savings come through optimization of supply pressures to match air supply and demand. The system shows the peaks and valleys of the processes for improved decision making.

The company expects to reduce its air consumption, and thereby energy usage, by 22% annually. The flexibility and scalability of both the hardware and software make it possible to implement the solution on every line at each of the 38 current locations and more to accommodate future expansion.

RESOURCES

PACSystems

www.Emerson.com/PACSystems



PACSystems RXi2-BP with Edge Analytics.



AVENTICS Series AF2 Sensors.

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