Metals Manufacturing Energy Savings

Challenge

In the United States, metals manufacturing is one of the largest energy consumers in the industrial manufacturing sector. According to the U.S. Department of Energy, aluminum and steel alone are responsible for approximately 9.8 percent of the total manufacturing energy consumed in the United States and 3.6 percent of all U.S. electricity consumption[1]. One-third of the cost of aluminum is the energy used to produce it[2]. Even small adjustments in reducing energy consumption yields dramatic savings.

When the harsh production environment of aluminum is factored in, energy reduction becomes even more challenging. High costs and hazards of instrument wiring have been problematic in aluminum manufacturing. Wiring, which can cost from $50-$2000 per foot[3] must run more than a linear mile, and currents of 220 kA are not only an electrocution risk but can also cause electromagnetic interference in wired systems.

Sentilla Solution

Sentilla is addressing this need with an innovative energy management solution that provides users with insight into the efficiency of the manufacturing process. Sentilla's offers a wireless, intelligent, flexible solution that can survive the extreme conditions without requiring maintenance and on-site configuration. By using tiny interconnected computers, the Sentilla solution can monitor, analyze, and actuate real-time conditions like current, voltage, and heat. That information is then correlated and vetted against business rules. The efficiencies gained from this insight can easily be applied to lowering production costs or increasing throughput. In either case, hundreds of millions of dollars go straight to the bottom line.

The extreme conditions in which aluminum is produced requires a wireless, easily maintained monitoring and analyzing solution to offer insight as never before seen into energy consumption.

Summary and benefits of energy efficiency improvements in metals manufacturing

Sentilla's wireless energy management solution has the potential to help any industry reduce process waste by giving plant managers critical, never-before-seen insight into their energy consumption. With the savings derived from this solution, the overall plant efficiency is increased resulting in higher throughput and reduced energy consumption.

Small improvements in electricity reduction lead to hundreds of millions of dollars in savings.

1 http://www1.eere.energy.gov/industry/steel/profile.html
2 http://www.eia.doe.gov/emeu/mecs/iab/aluminum/page2.html
3 http://www1.eere.energy.gov/industry/sensors_automation/pdfs/transformational_wireless

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