

Complete Your Architecture

Application Technique



Trying to Reduce Energy Consumption?

Use Allen-Bradley PowerMonitors to understand and reduce energy consumption in your facility

Customer Need/Application Issue

More customers are looking for ways to optimize their plant operations. After optimizing many aspects of their product design, they are turning to energy consumption as another means to lower total product cost. According to the Aberdeen Group, 72% of customers reported to be under pressure to reduce their manufacturing operational costs. Electrical energy consumption can account for over 50% of the utility bills for an industrial plant. This issue translates into a great opportunity to understand energy use trends and identify ways to reduce overall energy consumption.



Component Solution

The first step to reduce energy consumption is to understand where energy is being consumed, identify the largest consumers, and observe the energy trends of the facility. Power meters can provide this granular view of electrical energy consumption throughout the facility. Rockwell Automation offers three types of PowerMonitor™ meters that provide flexibility for the type of monitoring you are trying to achieve.

PowerMonitor 500 and PowerMonitor 1000

- Meters that are focused on energy consumption
- PowerMonitor 500 —door-mounted meter
- PowerMonitor 1000 —DIN rail-mounted meter, inside the cabinet



PowerMonitor 500



PowerMonitor 1000

PowerMonitor 5000

- In-cabinet product that monitors energy consumption and power quality events such as sags, swells, and transients
- Recommended at the main incoming power line
- Gives a view of both power quality and energy management
- Higher accuracy allows use for shadow billing



PowerMonitor 5000

The second area to consider is monitoring at the department level in your manufacturing facility. Many customer are doing cost allocation by department. In order to achieve this level of detail, they must install power meters to understand the electrical consumption of the various departments in their manufacturing facility.

The third tier of monitoring is at the machine or production line level. Meters at this level are typically installed to understand energy consumption per part that is produced and in some cases to monitor for power quality events that could be damaging expensive equipment.

LISTEN.
THINK.
SOLVE.™



In addition to installing metering devices, FactoryTalk® EnergyMetrix™ software is highly recommended to manage your energy data. The software provides options to visualize historical data and compare month-to-month or year-to-year consumption trends. FactoryTalk EnergyMetrix not only allows for monitoring of electricity, but also supports monitoring and reporting of all energy sources such as Water, Air, Gas, Electric, and Steam (W.A.G.E.S).

Once the meters and software are installed throughout the facility, assigning an energy champion is suggested. The energy champion is responsible for analyzing the historical data and trends and identifying where a facility can save energy. It is recommended a customer look for spikes in their energy demand and consider staging their equipment startup to reduce their peak demand. In some cases, it is important to understand your utility billing model such as peak and off peak rates to determine the optimal

start time of your equipment. Adjusting start time to an off-peak rate could save a customer a significant amount of money per year. It is important to note that every facility is unique and varies in the number of energy saving opportunities that can be identified. However, it is estimated that a customer can achieve 10-15% in energy reduction after installing power meters throughout the facility and taking action on the data collected. Access to facility energy data is powerful and assists customers in making decisions on equipment investments and drives behavior to lower the overall energy consumption.

Summary

Whether reducing energy consumption or achieving cost allocation by department is your focus, Allen-Bradley PowerMonitor meters and FactoryTalk EnergyMetrix software can help meet your energy management goals.

For more information on PowerMonitor meter selection visit: <http://ab.rockwellautomation.com/Energy-Monitoring>

For a complete list of PowerMonitor catalog numbers and FactoryTalk EnergyMetrix selection, download a copy of the Power Quality and Energy Management selection guide: http://literature.rockwellautomation.com/idc/groups/literature/documents/sg/1400-sg001_-en-p.pdf

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