

REMOTE ENERGY MONITORING

IMPROVES PLANT PERFORMANCE, REDUCES DOWNTIME

Significant changes have occurred in the energy management of industrial environments over the past decade. With the growing demand for uptime and rise of complex electrical equipment, power distribution systems are increasingly relied on to provide a clean, steady supply of power. Today's electrical equipment is also far more intelligent, relying on sensitive electronic controls and microprocessors to maintain optimal performance.

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To help plant management keep a closer eye on equipment and address these growing challenges, vendors and OEMs have moved away from proprietary technology and toward industry standard communications. Many pieces of modern equipment are embedded with Internet Protocol (IP) addresses that allow plant management to keep a close eye on operations by remotely accessing performance data by visiting a dedicated Web address assigned to each device.

However, there could be thousands of individual devices across an enterprise, which can make it a very difficult and time consuming process to achieve the full potential of remote management. Modern electrical power management systems can simplify this process by unifying data from multiple devices within a facility or enterprise electrical system – making it even easier to remotely access the data needed to maintain equipment health, plant availability and energy efficiency.

Intelligent data acquisition is the key

With an electrical power management platform, multiple data acquisition tools obtain real-time operational data from equipment. From the basement to the rooftop, for one facility or multiple, power management platforms can collect data from the devices commonly found across industrial plants, including:

- Meters and submeters
- Circuit breakers
- Motor control overload relays
- Motor protective relays
- Feeder protective relays
- Uninterruptible power systems
- Power distribution units
- Automatic transfer switches
- I/O modules



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Though these platforms are designed to provide a complete overview of power and energy systems, they can help narrow the scope of monitoring to deliver benefits for a variety of needs.

For example, a typical monitoring system could have 100 or more data collection points, several months of historical data storage, and even longer-term storage of minimum, maximum, and average data. By utilizing embedded intelligence, modern monitoring systems can help identify key trends from all incoming data and create easy-to-understand trend plots. The user can then set multiple parameters to be viewed on a single screen and, if needed, saved for future analysis.

Maximizing uptime with advanced alarm notification

Electrical power management platforms provide the ability to view a concise summary of device alarms and manage alarms at a remote location. Once incoming data is flagged as a potential problem, it is processed through a series of advanced data analysis tools, and the results can be sent as an alarm to plant managers. Upon receiving the alarm, plant staff can react quickly to analyze the details of the issue, before brainstorming possible causes and suggested actions.

Specific alarms can be coded for ease-of-use, with sorting and filtering for specific management teams built in. Additionally, alarms can be acknowledged individually or by groups; sorted by date, priority, or device; and exported for further analysis. You can also dive deeper for additional analysis including viewing historical data around the time of the alarm occurrence.

The importance of comprehensive remote monitoring

Maintaining equipment health, plant availability and energy efficiency is critical. The remote monitoring

and management capabilities of modern electrical management platforms are helping plant managers achieve these objectives without enormous investment or training. Additionally, these dynamic systems are constantly updated to enhance ease-of-use and interoperability with the latest equipment.

Most important, these solutions enable users to easily access the data needed to make direct improvements in the overall power reliability, energy efficiency, and safety in the environments they manage—whether they are on-site or not.

To summarize, plant management can achieve the following benefits by tapping into the power of modern energy management dashboards:

- Keep informed at a glance with pre-configured dashboards telling you exactly what you want to know
- Receive real-time notifications when something happens and address the issue wherever you are
- Spot energy usage anomalies so you can identify and adjust the equipment causing the problems
- Analyze detailed forensic data to determine the root cause of power problems
- Obtain the long-term power and energy usage information needed to make smart capital investment decisions.

Further reading on this topic is available in Plant Engineering magazine. To learn more about Eaton's electrical power management platforms, visit www.eaton.com/pxi.

Marty Aaron is Eaton's product line manager for software and connectivity products and has more than 25 years of experience in the electrical industry.



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