

# Monitoring energy usage creates four unique opportunities

## Application Note



### 1. Quantifying available panel capacity

When an electrician or technician evaluates a panel, they start by looking at its size—the number and size of circuit breakers installed vs. the number of empty circuit breaker spaces. Based on this observation, they estimate how much power the panel is using. However, there are times when a panel that appears to be lightly loaded with several empty circuit breaker spaces is actually overloaded, because of the size of the loads on the other breakers. Or, a panel that appears to be heavily loaded may be only partially loaded with ample spare capacity. Logging actual energy use eliminates the guesswork and saves unnecessary expense.

### 2. Identifying energy savings

Power loads vary as widely as the facilities they are in. Some facilities operate non-stop, while others have very specific times of operation and are relatively inactive the rest of the time. Energy loggers create a chart of those usage patterns over time, so that facility managers can analyze when and how energy is being used and determine where there is room for improvement. For example, an air handler running 24 hours a day may really only need to operate during the portion of a day when the space is occupied. In other instances, an energy-intensive process (e.g. operating an industrial electric

oven) may be able to be shifted to the evening hours when electric rates are lower. Monitoring how and when energy is used reveals opportunities to reduce energy usage by turning loads off or adjusting the schedule of when they operate.

### 3. Documenting hazardous issues

To connect an energy logger, a technician has to open and/or remove the covers of disconnects, motor control centers, panels, switchboards and other types of cabinets that aren't accessed very often due their high voltage levels and the difficulty of powering down vital equipment. That process creates an opportunity to check the electrical equipment for dangerous safety conditions that may have evolved over time, before they become disasters (e.g. severely burnt insulation on the conductor(s) feeding a panel—a sign of an overload), or serious electrical code violations,

such as fuses in a circuit that are oversized for the conductors they feed. Be sure to document any hazardous issues found and report them.

**Safety note:** technicians must always wear the appropriate personal protective equipment (PPE) and follow all safety regulations when working on energized panels.

### 4. Performing short job surveys

Load studies are often conducted when there is a specific need for additional power. Setting up the energy logger to conduct the study provides an excellent opportunity to perform a short job survey for the project in addition to monitoring power use—document potential locations for the new panel, installation issues, the number of hours required to complete the project, and necessary material.

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