

# Benjamin Electric Application Note for PMP Product Line

## RETROFIT - Power Metered Panelboard with Remote Control

### Installation Summary

A 40 year old panelboard in a manufacturing area was retrofitted with a new panel interior utilizing the Benjamin Smart Power technology (*reference figure 1*). Included in this panel update were the Eaton remote controlled branch breakers along with branch level and mains metering.

### Panel Summary

All (42) circuits were outfitted with power metering. From these (42) circuits, (20) circuits were devoted to fluorescent lighting which utilized remote controlled breakers (*reference figure 2*).

### Energy Details

A baseline of energy consumption was gathered for the lighting circuits over a month's time period, which equated to 118kWh per day. An on/off schedule was then developed to shed the lighting loads making use of natural sun light through existing skylights. This reduced the energy consumption to 72kWh per day, a savings of 46kWh per day. Using a 5 day work week, a utility rate of 18¢ per kWh, this yields a monetary savings of \$2,153 per year.

### Additional Benefits

Other equipment loads, such as oil heaters for machinery, were also identified as having energy reduction potential. The standard breakers on these circuits were replaced with remote controllable breakers, which allowed an evening/weekend on/off schedule resulting in additional energy savings (*reference figure 3*).

### Application Summary

Without the knowledge of detailed energy consumption it would not have been possible to detail the specific areas of energy consumption, and by doing so, create control schemes to manage that energy consumption. In addition, devices having a consistent load can be monitored, and if an anomaly occurs, can be immediately addressed therefore eliminating potential equipment failures.



Figure 1

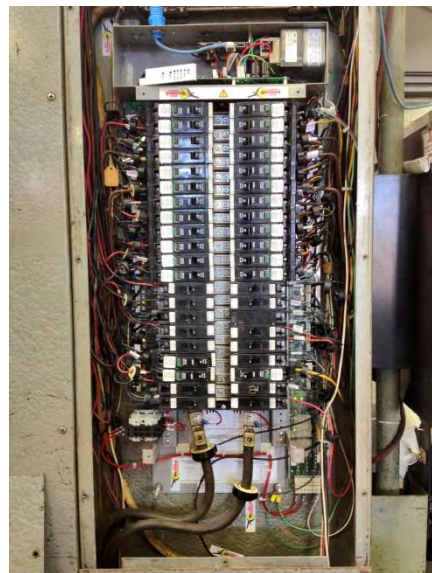


Figure 2

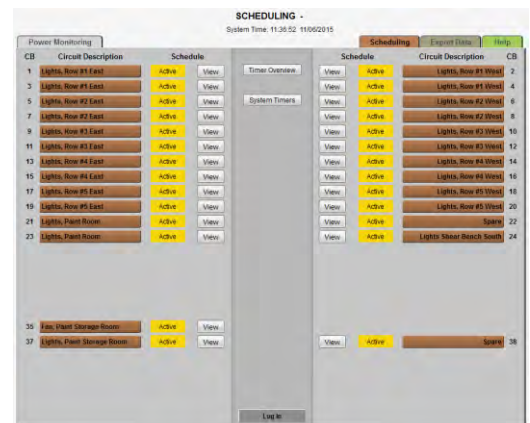


Figure 3