



## Elec-trol AUTOMATION White paper Embedded Downtime Controller

Lean Manufacturing programs provide companies with a way to measure every stage of production, resulting in practical quantifiable data on the work done in the factory. Management can then use this data to eliminate waste and improve productivity.

In this Lean Manufacturing implementation, operations management wanted to track the amount of machine downtime and compare the data from three separate shifts. The data displayed included number of downtime instances, cumulative downtime, and percentage of machine uptime.

The equipment utilized included:

- an Adaptive Microsystems LED sign to display data in 3 lines and 3 columns (one for each shift),
- ABB pushbuttons and switches providing inputs to indicate the current shift, status of the machine (up/down, operating/on-break), and a reset to clear counters, and
- an ICPDAS controller to monitor the I/O, compute the results, and display them on the Alpha sign via RS485 serial communication.



The operator turns a switch to select the current shift. At this point, the Alpha display resets the data for the appropriate shift. Data is collected from the machine by the ICPDAS embedded controller that sends the results to the Alpha sign. The sign continues to display data for the other two shifts – giving the operator valuable information to compare the performance of the shifts. The display is color-coded: green is used to show data for inactive shifts; amber

indicates the current shift when the machine is up, red when the machine is down.

This Lean Manufacturing solution has been in place for less than a year and in that time the facility has gone from 75% machine uptime to over 90% uptime. This improvement in efficiency can be traced to accurate, timely information on performance as well as a healthy competition between the shifts.

The nature of the embedded controller allows data to be sent via the ethernet to a data logger. Other ethernet appliances such as cameras can be added to Improved efficiencies that will translate to improved bottom line profits.

For more information about this system or to get a special system configured for your application please contact Matt Liiste at [mattl@elec-tro.com](mailto:mattl@elec-tro.com) .