CAS DATALOGGERS

Solder Pot Temperature Monitoring Helps Improve Product Quality

Using dataTaker Data Logger To Reduce Solder Waste and Costs

CAS DataLoggers has provided the dataTaker Intelligent Universal Data Logger to monitor solder pot temperature and reduce defective components.

The plant's solder pot is a cast iron crucible about the size of a large dorm fridge, housed inside an enclosure with a push button opening. The desired crucible temperature is around 650°F. Workers dip parts into the solder and as the shift progresses, the solder level is reduced and the crucible can get too hot, burning the solder when the temperature crosses 850°F. It is impossible to determine if the solder at time of application is burned, leading to defective components that must be scrapped or recalled post-sale. Because of this, workers must change the solder and clean the pot throughout the day. Traditionally, workers took manual temperature measurements on a clipboard, but often they didn't have time to log all the readings by hand. It was determined that continual monitoring was crucial with alarm notifications for the solder temperature throughout every shift.

Installation

The plant installed a [dataTaker DT80 Intelligent Data Logger](#) from CAS DataLoggers next to the solder pot enclosure. A high temperature K-type thermocouple immersed in the molten solder runs through a drilled hole in the enclosure to the data logger connection terminals. The DT80 displays the solder pot's temperature in real time on its integrated display, recording measurements with 18-bit resolution. High-speed counter inputs, phase encoder inputs and programmable serial sensor channels allow the versatile DT80 to scale and log temperature, run-time and many other values.

Usage

Every 5 minutes, the dataTaker takes a temperature reading and stores it in the 10-million point internal memory which provides for extended logging time. The user-defined memory also gives independent control of schedule size and mode so it logs only as long as needed. Built to last in industrial and hazardous environments, the dataTaker DT80 has a robust construction and low power consumption making it ideal for industrial applications like this one.

Whenever the solder pot temperature runs too high, the intelligent dataTaker data logger senses the alarm state and alerts the operator that it's time to perform maintenance on the crucible and replace the solder. The DT80 also emails these alarms to the manager, providing an indication that the maintenance gets done every shift in a timely manner. Additionally, the dataTaker retains the alarm events as well as the raw data.

The logger's extensive communications array enables the plant manager to connect to the DT80 locally through USB or Ethernet. All dataTaker data loggers feature built-in dEX software for setup and configuration. Accessing dEX with a web browser allows operators to configure the logger, see the temperature data in real time, create dashboard displays, and retrieve historical data for analysis. With an graphical interface designed to be similar to Windows it is intuitive and easy to use.

Benefits

The dataTaker drives the manager's expectation to see a significant reduction in rejected parts and in the amount of wasted solder. The K-type thermocouples and the dataTaker measure and log the temperatures with high accuracy and reliability, while the DT80's intelligent operation instantly notifies users whenever a pot's temperature is too high and needs to be changed out. Now no one has to stop what they're doing to write on the clipboard in the middle of their shift or waste time dipping parts in bad solder.

For further information on dataTaker Intelligent Universal Data Loggers, solder pot temperature or to find the ideal solution for your application-specific needs, contact a CAS DataLogger Application Specialist at **(800) 956-4437** or www.DataLoggerInc.com.