APPLICATION NOTE

CAS DATALOGGERS

Substation Monitoring System to Troubleshoot Alarms

Wood Product Manufacturer Benefits from Automated Monitoring Solution

CAS DataLoggers provided the substation monitoring system for a wood product manufacturer that was occasionally experiencing alarms at their main incoming power substation. Because the alarms happened infrequently, they had difficulty identifying the cause. However, these alarms were disrupting production and proving costly over time. Maintenance staff believed that they could identify the root cause if they could record power levels and other parameters but the sporadic nature of these faults meant that they would have to wade through enormous amounts of data to find the small amount that was relevant. Ideally, the customer wanted to monitor the power levels (in kW) 10 minutes before and 10 minutes after each fault, so they required an intelligent solution capable of event-based logging.

Installation

The manufacturer installed a dataTaker DT80 Intelligent Data Logger in the substation's control room cabinet which was then connected to sensors on the incoming main and various branch circuits. The DT80 is a cost-effective, intelligent, universal input data logger which is expandable with the ability to connect to nearly type of sensor. Given that the client wanted to capture data from 10 minutes prior to and 10 minutes following an electrical fault, they took advantage of the loggers data 'Archive' function.

Usage

The logger was programmed to measure the key parameters (voltage, current, power, frequency) every second with alarms set to trigger whenever any of the parameters was outside of the normal operating range. Normally, this would result in over 300,000 points per day. However, whenever an alarm condition occurred a timer was started while the logger the data logger continued to record for an additional 10 minutes. At the end of the 10 minutes, the archive function was activated which took the previous 20 minutes of recorded data in memory and created a separated time stamped file. By using the 10 minute delay, the archived file contained 10 minutes of data before the alarm and 10 minutes following the alarm. By doing this, only the data relating to each alarm was saved to memory for later retrieval and analysis, and all superfluous data was discarded. Utilizing this method they were able to go from searching through potentially hundreds of thousands of data points to looking at 2400 points for each event – a reduction of over 100x or more!

Benefits

Maintenance staff was able to quickly retrieve the data via the local area network using either a FTP client or a web browser, which also allowed for remote access to logged data. If they had access to the logger in the substation control room, they could also use a USB memory stick to manually collect the event data. Another convenient features was an internal counter in the data logger that recorded how many times the event recording was triggered. Using this, they could immediately see the number of recorded events on the logger's dashboard which was available from any standard web browser.

For more information on the dataTaker DT80 Universal Input Data Logger, a substation monitoring system 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.