

OVEN TEMPERATURE DATA LOGGER FOR MONITORING HEAT TREATMENT PROCESS

INTELLIGENT DATA LOGGERS PROVIDE HIGH-ACCURACY DATA COLLECTION



CAS DataLoggers provided an oven temperature data logger solution for a factory with multiple lines of (fixed) heat treating ovens. The factory's existing procedures required employees to periodically read temperatures from controller displays and record all these temperatures on a piece of paper. However, this manual method proved to be inaccurate and time-consuming, so the customer wanted to eliminate these recording/transposing errors and extra labor. Since the goal was to increase data precision and quantity and provide high-accuracy reporting to their own customers, data collection needed to be simple and unobtrusive. Management decided

that it needed a compact yet rugged solution offering a large number of inputs along with convenient data downloading capability.

INSTALLATION

The factory installed 2 [dataTaker DT85 Intelligent Data Loggers](#) to automate their data recording process. The data logger inputs consisted of a combination of new thermocouple sensors and repeated signals (4-20 mA, 0-5 VDC) from the existing controllers/display units. In case the temperature monitoring scope suddenly needed to expand, the dataTaker inputs could be increased up to 300 channels or 900 single-ended inputs using dataTaker channel expansion modules.

USAGE

Each stand-alone DT85 data logger could connect to a wide range of sensors and data measurement devices using its 16-48 universal analog sensor channels. The systems' rugged construction withstood the factory's extreme heat ensuring years of durability and dependable operation. Current temperature readings of the heat treating ovens were shown on each logger's built-in display, and each data logger could store up to 10 million data points allowing independent control of schedule size and mode so that users could log only as long as necessary. All curing data was now recorded to non-volatile memory without any human intervention needed.



Additionally, whenever power interruptions occurred, the dataTakers generated a record of the temperatures, allowing engineers to determine exactly how much of the [heat treating cycle](#) had been completed.

This reduced scrap product, lowered the building's wasted energy and helped increase product quality. The dataTakers also archived data on alarm event, sending data an Ethernet network without needing polling or specific host software.

Temperature data was also available via the network and the DT85's built-in web server for ad hoc monitoring of the oven temperatures throughout the plant. The free software provided for configuration, setup, and displayed temperature measurements in real-time, allowing the factory's quality engineer to remotely access the logger's web server from home for effective remote monitoring.

Ethernet connection to LAN was present at each data logger so that the temperature data could be automatically pushed via FTP to a local server for historical archive. The DT85's sophisticated communications array also included RS232/485 as well as support for Modbus for connection with SCADA systems. Calculations and diagnostic information were easily accessible in the browser style interface, and users also viewed the data as mimics, charts, and tables.

BENEFITS

The factory's heat treatment monitoring needs were fully met by the intelligent dataTaker DT85 data loggers, which entirely replaced the previous reliance on fault-prone manual measurements and freed up time for more important tasks. The data loggers automatically monitored the oven temperatures with precise accuracy while also handling data transmission and enabling remote access. Users relied on the intuitive dataTaker software to view the real-time temperature data in any network-accessible location using the loggers' many advanced logging and communications features. Additionally, the dataTakers kept on taking measurements even during occasional power interruptions, allowing operators to effectively track the heat treating cycle and save on energy costs.

For more information on the [dataTaker DT85 Intelligent Data Loggers](#), other oven temperature data loggers 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.