

OVEN TEMPERATURE PROFILING AT EXTREMELY HIGH TEMPERATURES

PORTABLE LOGGER MONITORS CURING OF METAL ALLOYS AT 800 FAHRENHEIT



CAS DataLoggers recently provided the oven temperature profiling solution for a manufacturer who needed to monitor their thermal curing production line. This involved large batches of metal alloys exposed to high temperatures in a long curing process. The customer's large production runs were cured in batches for hours in 3 large ovens running continuously. To ensure consistent product quality, it was especially important to have proof that the material had passed through the manufacturing process at the right temperatures for the right amount of time. The data logger solution would need to connect to Type K

thermocouples and given the ovens' 800°F (426°C) temperatures, the customer also needed an especially resilient thermal barrier, all without going over budget.

INSTALLATION

CAS DataLoggers supplied the customer with a [Grant Portable Oven Temperature Data Logger](#) which featured 6 thermocouple input channels for use with Type T and Type K thermocouple probes and supported fast sample rates to enable fast process times up to 8 samples a second. The manufacturer also opted to equip the logger with a Custom Enhanced Thermal Barrier with internal [heat sink](#) featuring advanced phase change technology for maximum protection and heat absorption. The barrier's

all stainless-steel construction formed a robust and protective barrier for the data logger.



USAGE

The standalone oven temperature profiling data logger formed part of a complete system for the customer's through process monitoring, being battery-operated and easily portable. Users navigated the logger's menus through the simple 3-button design via the built-in

display and could also navigate them from a PC. Configuration enabled the logger to automatically start and stop recording at specific times and temperature levels to give users the most accurate process overview. Each reading reported the time and date, while the logger's non-volatile memory provided up to 260,000 readings of secure data.

By passing the Grant oven logger through the process along with the products, a temperature profile was produced to show exactly what was happening to the products during the cure cycle. At the end of a production run, the logger automatically gave users a percentage cure result on its integral screen. A quick unload of the data via the integral USB port allowed for further analysis, reporting and data archival. The custom thermal barrier's phase change insert and heat sink stood up to the extreme heat, ensuring the reliability of the logger.

BENEFITS

The manufacturer's product experienced improved quality following use of the Grant oven logger in their heat treatment application. Additional benefits included increased efficiency, reduced energy costs, quality assurance reports for compliance and traceability, and complete quality control for the process. Additionally, the thermal barrier's solid construction offered excellent protection for a comparable price to others on the market.

For more information on the [Grant Portable Oven Temperature Data Logger](#), oven temperature profiling 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.