



## Oven Temperature Profiling of Metal Alloys At 800°F Portable Oven Temperature Data Logger

PCO Div. II, Inc. recently provided the oven temperature monitoring solution for a manufacturer who needed to monitor their through process. 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 run continuously. To ensure consistent production 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. This device 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.



PCO Div. II, Inc. supplied the customer with a **Grant** Portable Oven Temperature Data Logger which featured 6 temperature channels for use with a wide range of 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. Its all-stainless steel construction formed a robust and user-friendly barrier for the data logger.

The stand alone temperature 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 and the process. At the end of a production run, the logger automatically gave users a percentage cure result on its integral screen. Further analysis or data storage was then possible. The custom thermal barrier's phase change insert and heat sink stood up to the extreme heat, ensuring the reliability of the logger. The temperature logger also printed out a concise, graphical report of each run direction via USB without the need for a PC.



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 Portable Oven Temperature Data Logger, other data logging products measuring additional values, or to find the ideal solution for your application-specific needs, contact a Data Logger Applications Specialist at (800) 546-1113 or visit the website at [www.pco2.com](http://www.pco2.com)

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