

SUCCESS STORY 59

Continuous Monitoring of Paint Curing on Automotive Bumpers



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How can I continuously monitor the performance of an automated paint curing process?

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Situation and background

In general, Datapaq® profiles are performed on paint lines to measure paint cure quality on an intermittent basis - for example daily, weekly or monthly. The assumption the user makes is that the process is working correctly for the period between acceptable consecutive profile runs. Obviously the more frequent the profiles the more confident the customer will be that the process is constantly in control. The desired aim of any paint QA manager would be to have live profile data from the process at continuous intervals through each shift. A Datapaq system equipped with the optional TM21 radio telemetry functionality can provide real time data from within the process.

The winning solution

- Ability to provide a profile system that could monitor every product cycle providing live product temperature data, via radio links, from the two coating oven lines, in real time, over the 9.5 hour shift.
- Datapaq system continuously runs through the cure process loop, fully protected, constantly providing product temperature data from a sample bumper with thermocouples attached.
- A trial of the Datapaq system in a serpentine oven showed that over 99% of all data was received over a 95 min cycle, thus proving the reliability of data transmission and collection.
- Single PC and receiver able to collect temperature data simultaneously from two separate Datapaq systems, running on separate bumper lines.
- Datapaq hardware only loaded and unloaded once per shift, reducing handling wear and tear on the system and the thermocouples.

Savings made

The system can cycle 6 times in one shift with only one load & unload operation required. This reduces the labor required from 3 hours to 30 minutes. On this benefit alone, a leading automotive producer in the USA estimated the system would pay-back in 6 months.

The end user is confident process yield will now increase due to the immediate notification of any process variation, from the Datapaq system.

KEY FACTS

Customer's End Product
Automotive bumpers

Max Temperature Reached
130°C/265°F

Duration of Process
Continuous 95 min x 6 cycles

PRODUCT AND BENEFITS

TB0081 and TP2016-TM providing sufficient capability for 9.5 hours of continuous monitoring.

- Significant time/labor cost savings can be made – load/unload the system once per day, not once per cycle.
- Immediate notification of any process change – eliminating scrap, increasing yield.
- Every batch of product now has a full traceable record of the coating process.