

SUCCESS STORY 80

SIMULTANEOUS MEASURING OF TEMPERATURE AND HUMIDITY IN AUTOMOTIVE PAINT LINES



KEY FACTS

Customer's End Product
Automotive bodies

Max Temperature Reached
70°C/158°F in dehumidifier
<200°C/392°F in curing oven

Duration of Process
Typically 70 minutes

PRODUCT AND BENEFITS



DP2186 with MP21-RH-UG humidity sensor

- Significant cost savings due to yield increase
- Eliminated risk of process contamination
- Single process results for both humidity and temperature in one operation

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How can I simultaneously monitor process temperature and process humidity in an automotive paint line?

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Situation and background

Datapaq® Oven Tracker® products are used by automotive plants worldwide to monitor car body temperatures in paint cure ovens, enabling the user to guarantee that the physical and cosmetic properties of the paint meet the required quality assurance standards. The application of paint onto the car body and the de-humidification prior to clear coat application and full cure, requires accurate control of both temperature and humidity. Getting the paint application conditions wrong creates significant risk of adding rework and repair, thus reducing throughput and increasing labor costs. Typically, operators use handheld devices to measure humidity at one or two points in the spray booths and de-humidifier zone. This approach is not ideal, as it requires entry into the paint line by an operator, introducing contamination risks and influencing the measurements taken. Accuracy of these measurements was claimed by the operators to be poor (+/-10-15% RH). The data collected is manually recorded and does not give a true picture of what the product experienced passing through the process.

The winning solution

- A trial was done with the Datapaq MultiPac21 system confirming that it was possible to simultaneously measure the process humidity (%RH) and product temperature throughout the length of the process.
- Humidity and curing measurements appear together on the conventional Datapaq profile report, providing a complete picture of the process.

Savings made

- Yield was increased with more than 90% of products being coated perfectly.
- Contamination risk and lost production time due to line closure were reduced, since there was no need for an operator to enter the paint booth.
- Accurate process adjustments to reflect seasonal climatic variations could be made, maintaining full production.