REAL-TIME FEEDBACK

Intravis unveils closed-loop inspection system

By Phillip Britt

INTRAVIS HAS upgraded the software of its CapWatcher III visual inspection system to link it to the primary processing machine to provide continuous feedback for real-time quality control.

Intravis unveiled the closed-loop system in September at Drinktec in Munich, in what the company calls the first live demonstration of an injection molding machine automatically regulating itself based on input from a visual inspection system.

“The machine making the products is getting continuous feedback,” said Scott Heins, the company’s director of sales and marketing. “It eliminates production of significant scrap and the need for intervention in the process. In a typical quality-control scenario, you analyze a batch of products a long time after they are produced and then try to interpret that information to take corrective action. This is all about automating that procedure.”

This reduces the need for human intervention, Heins said.

At Drinktec, the company’s CapWatcher III system inspected the diameter of each 38mm cap produced by a Netstal Elion 2200-1000 hybrid press. Using an Open Platform Communications-Unified Architecture (OPC-UA) interface, the Intravis software continuously fed data about cap diameters to the Elion machine’s aXos controller, allowing it to automatically adjust the process to keep parts within tolerances.

The Elion machine molded 2.8-gram, HDPE closures with tamper-evident bands for milk bottles in a 32-cavity mold in a 4-second cycle time. The CapWatcher III visual inspection system is equipped with an assortment of high-resolution color cameras to inspect as many as 252,000 caps per hour.

For purposes of the demonstration, Intravis changed settings on the injection molding machine to produce diameters that were trending out of tolerance so that show attendees could see the automatic adjustments.

“By having the feedback in real time, adjustments to the injection molding machine are made before the closures exceed tolerances,” Heins said. “The diameters can trend larger or smaller depending on changes in the molding process.”

SOFTWARE MAKES DATA TRENDS MORE ACCESSIBLE

Intravis also has software that can monitor data from multiple sources and locations.

Its IntraVisualizer software can feed individual system data to a centralized interface in an open-loop system. This provides machine operators with easy-to-read graphs to show trends involving multiple sensors or multiple machines. With the availability of email notifications, managers can monitor lines from several different plants at one time.

The software can be customized to monitor specific periods, shifts or batches. The software also can alert operators to an estimated time to failure for certain parameters, enabling operators to intervene before the products are out of tolerance.

“It tells you how much time you have to address an issue in the production process, so that you can continue running and producing until the next scheduled downtime,” Heins said.

CLOSED-LOOP-READY SYSTEMS NOW AVAILABLE

The CapWatcher III system and IntraVisualizer software were already in use at a number of plants prior to the Drinktec demonstration, but those were all open-loop systems, Heins said.

Following Drinktec, CapWatcher III became available complete with the new Intravis software for a closed-loop-ready system, Heins said. Shortly after the show, Intravis started receiving orders for the closed-loop-ready systems. Intravis plans to offer the capability on its other visual inspection systems, but does not yet have a timeframe.

Applications for the company’s visual inspection systems include preforms, closures, bottles, containers and labels.

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