Success story

Omron uses vision inspection to maximize label accuracy in canned foods production

In the packaging industry, it is extremely important that product containers accurately represent what is inside, as mislabeled packaging creates serious liabilities across a number of industries. Incorrectly labeled food and beverage products may result in adverse reactions due to allergies and other health issues, and the liability associated with such occurrences is immense.

In response to this need, Omron has developed a custom control solution known as the SKU Verification System. This production assembly verification system can be integrated into a number of points on a customer's packaging line to eliminate mismatches between the actual product and its packaging description. It improves efficiency by detecting incorrect raw material and illegible SKU codes before products are packaged and shipped to retail stores.

Specifically, the system ensures that the proper containers, labels, and cases are matched to one another at all stages of the packaging process, including fillers, labelers, date code markers, cappers, and sealers, banders, wrappers and case packers. By installing the SKU Verification System, manufacturers can minimize wasted time and manpower that would otherwise be required to find and remove faulty products after they have been packaged. The solution also keeps downtime and production costs to a minimum, while the reduction in packaging errors improves product quality and helps keep consumer confidence high.

Business need

A major North American food production and distribution company was seeking a reliable solution for easily identifying the contents of each product at its canned foods plant.

Unique solution

An integrated vision system was added to the SKU Verification System solution developed by Omron to accurately and swiftly identify the contents of each canned product and minimize packaging errors.

Customer benefits

Omron's solution improved overall product quality and production efficiency. The manufacturer can now make sure that the correct product is being run and the correct roll of labels is loaded on the labeling machine.

The solution

Omron's SKU verification system dramatically lowered production costs and increased overall profitability

The need

A major North American food production and distribution company was seeking a reliable solution for its canned foods plant that would eliminate packaging errors resulting from a slight misalignment between the canning process and the packaging line. In some instances, the products were canned and subsequently placed on pallets, which would then be organized into larger pallets and stored before being loaded onto a labeling line and prepared for shipping.

The cans were completely sealed, so the only means of identifying their contents was a three-character alphanumeric code printed on the top of each can. While the SKU Verification System would compare the SKU barcode on the label with the product being run, the process was open to operator errors when identifying the actual contents. Omron's SKU Verification System by itself would not reliably verify that the label and contents of the canned products were the same.

The technology

The SKU Verification System employs an Omron PLC to communicate with a barcode reader that scans the SKU barcode on each product label. The SKU data is compared against the library of data loaded in the PLC, and the system will stop the process and alert the operator if it detects a mismatch. A touchscreen interface unit (HMI) allows the operator to select the appropriate product being run, and the system provides the flexibility to add to or modify the SKU data list maintained in the controller.

To address the concerns regarding the identification of canned products, Omron added an integrated vision system to read the three-character codes printed on the top of each can using optical character verification (OCV) to verify their correctness. This feature links the SKU barcode data with that of the product being run and verifies that the proper pallet of cans is loaded onto the line. The upgraded SKU Verification System also ensures that the correct label roll has been loaded.

The outcome

The implementation of Omron's SKU Verification System with integrated vision and OCV has provided clear benefits for the customer. By integrating the operator's product selection and changeover process with the system, the manufacturer can now make sure that the correct product is being run, the correct product is loaded onto the line, and the correct roll of labels is loaded on the labeling machine. The solution lowers total production cost while increasing profitability in addition to enhancing consumer satisfaction and protecting the company's brand reputation.