

MAJ Enterprises Presents from Cognex

Image-Based Scanner Boosts Read Rates from 93% to 99.9%, Saving Meat Plant Time and Money



The West Liberty Foods plant in Tremonton, Utah processes turkey, pork, beef and chicken in a range of packaging options including shaved or fluffed, stack and shingle. The meat produced by the plant is boxed and moves on a conveyor line to a refrigerated warehouse next door, which is owned and operated by Millard. "It's important that we have complete visibility of the product as it moves out of our building and into the warehouse," said Dave McDowell, Director of Information Technology for West Liberty Foods.

The laser barcode reader used in the past was plagued by high reject rates. Part of the challenge arises from the high speed of the line, which runs at about 200 feet per minute. The packages come in many shapes and sizes. There is a strong potential for the boxes to become skewed while traveling down the conveyor. The labels themselves could be placed in different positions on the box and also were sometimes skewed.

In the past a 1-D linear barcode was applied to each package at the slicing station. "We tried for years making adjustments such as investing in barcode printers and readers, changing our process for applying labels, etc." said McDowell. "But we could never improve the read rate beyond 93%. Sometimes the scanner could not read a label even when it appeared to be letter-perfect. At up to 25,000 boxes per day, a reject rate of 7% quickly became unmanageable. We had to shut down the reject line and rely on Millard to tell us what we had delivered to them."

A local automated identification distributor called Echo Automation suggested trying image-based code reading technology. "We tried the Cognex DataMan® 500 code readers on our existing linear barcodes and saw an immediate improvement to a 98% read rate," McDowell added. "Based on that improvement we decided to accept the recommendation of Echo Automation and try 2-D Data Matrix barcodes. After some further tuning with the DataMan 500 we were able to achieve 99.99% read rates. In the final installation, the decision was made to go with two DataMan 500 units to achieve complete redundancy and ensure 100% read rates. The only boxes that cannot be read now are those where the code is missing or severely damaged."

The DataMan 500 acquires an image of the entire box and locates the code regardless of its position and orientation so the position and orientation of the barcode no longer matters. The code can be printed directly on the box, which saves time by eliminating the need to manually apply a label to each box. The code can be positioned anywhere on the box, making it possible to meet customer requests to put the code in a specific position. The DataMan 500 automatically records failed images and stores them on a server. West Liberty engineers can look at the images to see why they failed. This provides a troubleshooting capability that reduces the time required to resolve code printing issues.

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