BREAD MAKER BRINGS IN THE DOUGH

Learn how a new feeder controller helps improve control and accuracy for a dough-feeding line.

By Carlos Moya, Product Manager, Hardy Instruments

The ultimate goal of any upgrade is to increase productivity and profitability. A large bread maker in Southern California achieved these goals after revamping one of its dough-feeding lines. The company implemented a new feeder controller and new load cells that have helped it to achieve better material flow- and feed-rate consistency, improve production, minimize waste, achieve accurate weight readings and improve plant safety.

The bread maker's engineering director determined that the new feeder controller's accuracy would be a key benefit.

One of the company's objectives for the dough-feeding line upgrade was to find an improved control loop, preferably PID, and a scale that's easy to troubleshoot and calibrate. These components needed to interface with its existing Allen-Bradley® ControlLogix® programmable automation controllers (PAC) from Rockwell Automation.

The company's team considered many options for the revamp. The existing application used a continuous-rate control with an auger to control how much bread the company bakes per day.

The bread maker had been using its own PAC-based rate control solution with a ControlLogix system, and I/O modules on DeviceNet™ to communicate to the valves and feeder.

The line was using standard load cells to monitor loss-in-weight from the dough hopper. The bread maker wasn't getting the desired accuracy from its solution, which used a control-loop algorithm its engineering group designed years earlier.

Hooked by Accuracy

To help the bread maker, our company recommended that the bread maker use the new HI 1756-FC feeder controller (see **photo on page 38**) for the ControlLogix platform, paired with its INTEGRATED TECHNICIAN® (IT) Junction Box and C2® ADVANTAGE® load cells.

To assist with seamless integration, we developed the HI 1756-FC with the Rockwell Automation Integrated Architecture Builder (IAB) and Allen-Bradley ControlLogix Add-On Profile (AOP).

The feeder controller is a plug-in module that installs directly into the ControlLogix PAC rack. It requires only ladder logic programming that can be easily inserted into existing code to quickly program the feeder system application.

The Hardy Instruments HI 1756-FC feeder controller for the ControlLogix PAC is a plug-in module that requires only ladder logic programming.

After a product demonstration, the bread maker's engineering director and other company personnel determined that the feeder controller's accuracy would be a key benefit to the dough-feeding line upgrade.

In addition to accuracy, the team was especially interested in the feeder controller's ControlLogix plug-in capability and inclusion of a PID control loop that Hardy developed.

The electronic calibration capability of the C2 load cells will help the bread maker recognize immediate cost and time savings as the company eliminates the need for calibration weights and an outside calibration service. The IT Junction Box, which electronically diagnoses scale problems, helps improve plant safety and efficiency by allowing company personnel to troubleshoot the scale from the comfort of an office.

Raking in the Dough

The bread maker's own engineering technicians and PAC programming knowledge helped to make it the most cost-effective solution for the company. The upgrade project's system integrator that's installing a new hopper in the same system also will install load cells and a junction box.

The bread maker is pleased with the improved productivity and profitability it will see with this dough-feeding line revamp. □

Rockwell Automation Encompass™ Product Partner Hardy Instruments, San Diego, is an ISO 9001:2008 certified designer and manufacturer of weighing solutions.

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