

Case Study

## Sequential Batching

Solution for cereal plant improves automation process and accuracy in production

### Challenge

- Achieve accuracy batching process
- Use a single weigh hopper to save installation costs
- Prevent fluctuations in weight readings due to vibration
- Work seamlessly with ControlLogix platform
- Use electronic calibration

### Solution

- HI 1756-WS ControlLogix Plug-in module
- Hardy ADVANTAGE® tension load points with C2® Electronic Calibration
- Hardy IT® Junction Box

### Results

- Fully integrated batching system with electronic calibration
- Improved accuracy even with surrounding vibration
- Saved installation costs



In this organic cereal plant, the customer wants to install a sequential batching system where all of the batch recipes and sequencing commands are stored in the PLC. To save on installation costs, they want a system where a single weigh hopper can be used in the batching process. Each one of four ingredients is conveyed into the batch hopper, one at a time, using a pneumatic conveying system to the recipe weight. When all of the ingredients are loaded, a bottom slide gate opens. A pneumatic hammer clears the product and the batch is mixed in the mixing chamber. Then the batch reaches the staging vessel, which dispenses the correct amount of product for packaging.

### THE CHALLENGE:

“We have experience with traditional calibration,” said the customer, “but we are looking for an easier method using electronic calibration. We would also like an easier way to diagnose problems if they should occur.” The customer uses a Rockwell® ControlLogix® platform, and wanted a seamless integration of the load cell signal into the PLC. Because of the aggressive mixing actions in the platform, vibration could cause significant fluctuations in the weight readings.

### THE SOLUTION:

To meet seamless integration, electronic calibration, and accuracy in a high vibration environment, the customer chose Hardy’s HI 1756-WS ControlLogix plug-in module, featuring WAVERSAVER®, C2® calibration and INTEGRATED TECHNICIAN (IT)®. Three HI HLPT ADVANTAGE® Series tension load points were mounted in the support of the batching hopper to weigh each successive product load in the batch. The load points were wired to a Hardy INTEGRATED TECHNICIAN Junction Box and connect to the HI 1756 Weigh Scale Module.

### THE RESULTS:

The company now has a fully integrated, automated sequential batching system with easy electronic calibration built in system diagnostics and reliable precision even under high vibration conditions. According to the plant manager, “This Hardy batching system has improved our automation process and accuracy, saved us installation costs and works seamlessly with our ControlLogix platform.”

### EQUIPMENT USED:

Hardy HI HLPT ADVANTAGE® Series tension load points, Hardy IT Junction Box, and HI 1756-WS Weigh Scale Module for ControlLogix.

### EXAMPLE CUSTOMERS and APPLICABLE INDUSTRIES:

Any bakery, cereal, or food plant where product batching is involved.

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