

Case Study

Checkweighing

Solution for snack foods manufacturer increases operational efficiency

Challenge

- Poor speed and accuracy of old weighing system
- Waste of expensive materials
- High maintenance time and cost

Solution

- Multiple Hardy HI4050CW checkweighing bundles
- Advanced EDGE DETECTION
- Real time Data Quality indication

Results

- Estimated savings of \$1 Million per month per area
- Easier configuration and maintenance
- Faster ROI



THE BUSINESS NEED:

A leading snack foods manufacturer, belonging to a division of a large global consumer packaged goods (CPG) company, recently approached Hardy regarding their checkweighing needs. Existing product inspection systems were not meeting their operational expectations. The Customer's Project Engineer told Hardy that they were "challenged by not being able to repeatedly meet their speed/accuracy checkweighing specifications of better than 250 milligrams resolution, at 400 milliseconds per pack". In addition, their existing systems:

- required expensive "green board" custom hardware
- had proprietary software
- and maintenance was expensive and unreliable



THE OPPORTUNITY:

"They wanted to find and implement an alternative solution. They felt they had an opportunity to reduce manufacturing costs by minimizing product giveaway, if they could just meet their check weighing specifications consistently," explains Area Business Manager, Stan Modzel. At the same time they wanted to install checkweighers that would:

- use off-the-shelf, open source, non-proprietary technology
- be easy for the operators and maintenance folks to use, modify & maintain
- retrofit into existing system

THE SOLUTION:

Hardy's Engineering Manager, Dean Raby presented the Customer with the solution: "We offered them multiple HI4050CW check weighing bundles. This solution met all their needs." The check weighing bundle consists of a digital, ceramic load cell and check weighing controller:

- It was easy to install, use, maintain & modify. It is cost effective. It's not a black box, it is an off-the-shelf solution. It easily integrates to Rockwell and other PLC's.
- It was able to manage up to 250 packs per minute. It breaks the traditional analog strain gauge "speed barrier", without the cost of MFR (Magnetic Force Restoration or Other similar high speed / resolution technologies)
- It delivered many smart check weighing features. It offers advanced EDGE DETECTION (weight on & weight off) eliminating the need for photo eyes. It provides the operator with real time indication of DATA QUALITY. Plus it has an embedded DATA LOGGER, which can be used during startup or trouble shooting.



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THE SUCCESS:

Operational Results

The customer's operational and engineering teams ran an off-line trial which produced promising results. A decision was made to install 12 x HI4050CW bundles onto one of their production lines. Dean Raby, Hardy's Engineering Manager monitored and verified the results by doing random checkweighs manually over a period of more than 4 weeks. "All 12 product inspection systems were monitored and upstream filling systems adjusted. The mean difference and standard deviation measured improved over the 4 week period. No safety issues were experienced," Dean confirms. The baseline on the previous systems was delivering = 0.54g, with a standard deviation = 0.82. The final analysis with the new Hardy HI4050CW bundles delivered a weight variance mean of = 0.11g with a standard deviation = 0.20. The results were better than the 0.25g specification they were trying to attain. No production line stoppages occurred during the test phase and no issues were found with secondary weight checks.



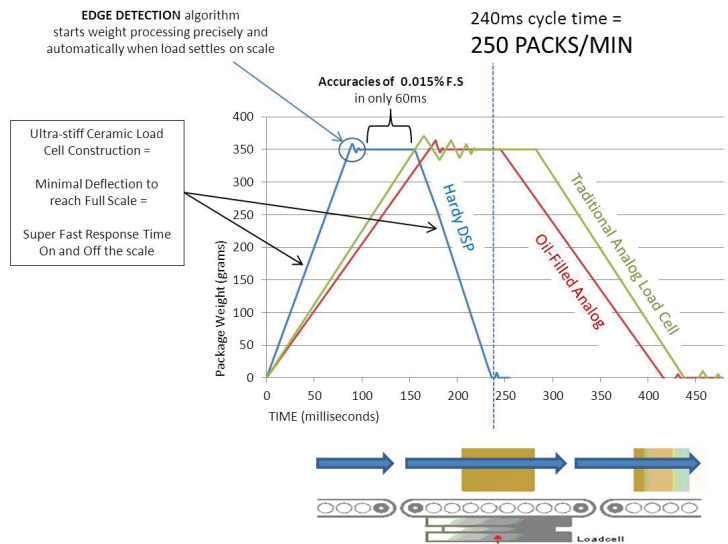
Financial Savings

"The customer calculated that the reduction in finished product giveaway would deliver savings of up to 1 Million dollars per month per manufacturing facility. This was based on installing 160 checkweighing bundles on 14 manufacturing lines in their packaging area, and running 3 shifts," Area Business Manager Stan Modzel explains.

Reduction in Finished Product Give Away resulting in accelerated ROI:

| | |
|--|--------------------------------------|
| 20 manufacturing/packaging lines | = 240 checkweighing lanes |
| # of minutes per day per lane | = ~960 |
| # of cans per day per lane | = ~115,200 |
| # of checkweighs per minute | = 120 |
| # of cans per day | = ~27.65 Million |
| # of cans per month | = ~830 Million |
| Estimated finished product savings (best case) | = ~ 0.36% per portion |
| Estimated \$ savings | = ~ 3\$ Million in savings per month |

The Hardy Process Solutions Checkweighing Advantages



ROI - WHAT WAS THE "OPERATIONAL" VALUE ?

Reliability and lower life cycle costs resulting in accelerated ROI:

- Component cost is considerably less than in "black box", propriety hardware solutions.
- Less dependence on vendor resources for upgrades, modifications, and troubleshooting.
- Off the shelf components that are readily available and locally supported.
- Limited set of cost effective spares can be kept on-site.
- Easier swap out of hardware.
- Easier upload of software, configuration and calibration parameters dramatically reduces MTTR (mean time to repair) in the event of a failure.
- Inter component communication via industry standard fieldbus protocols such as EthernetIP.
- One HMI can display the production data for multiple rows.
- The open platform allows for unlimited data collection and transfer to MES system.
- Future loop control for weight control, and other controls enhancements can be easily added.
- Depending on area ROI can be reduced from years to months, or months to weeks.

Could you use a similar performance improvement on your product inspection systems?

To find out more about the HI 4050CW solutions or to ask for a quote please contact Hardy at 1-800-821-5831 or visit www.hardysolutions.com