



DYNAMIC WEIGHING

CONSULTATION DESIGN INSTALLATION and SERVICE

VITAMIN "C" ADDITION

The Application

"Reducing the number of discarded 3 ton product lots".

A local candy manufacturer produces 3 tons per hour of a Vitamin C enhanced candy on each of 5 production lines. Hourly QA tests are conducted and any off-spec 3 ton lot which can not be reworked has to be discarded.

Customer Concerns

A Vitamin C addition flow rate of 33 grams per minute was being controlled by a vibratory feeder. The flow rate was pre-set in static mode but gave no indication of actual flow rates during production. Issues such as cavitations, varying granule size, moisture content and plugging of the outlet valve went undetected which resulted in unacceptably high lot rejections by QA.



Solution

BLH Engineers, using "KIS" technology load cells designed a CUSTOM DYNAMIC scale to replace the existing static scale. Actual live flow readings during production are now provided to control the screw feeder.

"KIS" technology load cells are immune to high noise and vibration, temperature and convection currents associated with the plant floor.

Interlock logic programmed into the PLC allowed production to automatically refill the dispensing hopper with no loss in feed rate accuracy.

Results

Acceptance testing of the dynamic scale in production mode demonstrated "ZERO ERROR" on a 33 gram/min flow rate with a 0.1 gram resolution.

Final QA testing results by the client were not disclosed but four additional systems were ordered for lines 2 – 5.

Special Points of Interest...

- During production any off-spec 3 ton lot of product can not be re-worked and must be discarded
- Original system had no way of indicating actual flow rates during production
- Production issues were going undetected
- BLH's solution utilizing Dynamic weighing demonstrated ZERO error

A CUSTOM DYNAMIC WEIGHING SYSTEM WAS THE ANSWER