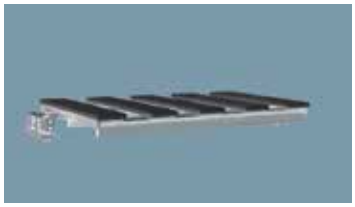
SIEMENS

Tomato processor improves plant efficiency and productivity

using Siemens WD600 belt scale on existing conveying systems

Process Instrumentation



WD600 belt scale

BW500 belt scale integrator

Challenge

A tomato processor located on the Pacific coast uses the latest technologies in peeling, dicing, and packaging tomatoes. They were preparing to replace some of their older weigh feeders because of declining performance. One of their main concerns with installing new weigh feeders was the cost of moving the existing conveying systems in order to accommodate new weigh feeders.

The customer had also installed new steam peelers to replace the older ones. They wanted to compare the efficiency of the new peelers with the older ones. Without being able to calculate the weight of the tomatoes before and after the peeling process, it would be very difficult to see if the new peelers were more efficient than the older ones. It was also hard to figure out how to improve the process in order to reduce product loss during the peeling process.

Solution

Seven (7) Siemens-Milltronics WD600 belt scales were installed on the customer's existing conveyors that transfer the tomatoes into the plant before and after being peeled. By using the WD600 belt scales with high accuracy SS load cells, the customer was able to get an accurate weight of the tomatoes as they were moving along on their existing conveying systems. With a verified accuracy of better than 0.5% after performing several material tests, the customer was able to trust the Siemens belt scales and use the values reported through the Siemens BW500 integrators to calculate the efficiency of the process.

A WS300 speed sensor was employed to provide a digital signal transmitted as speed input to the BW500 integrator for calculation of belt speed, flow rate and totalized weight. This allows the customer to achieve even higher accuracies.

The Siemens belt scales were installed on different lines to weigh the tomatoes coming into the peelers, and then weigh the tomatoes again after coming out of the peeling process. By calculating the total weight difference, the customer can easily calculate process efficiency.

Benefits

- *Time Savings:* The customer had older weigh feeders that were removed because of their declining performance. Siemens was able to offer a more efficient solution by using the WD600 belt scales. This was attractive to the customer because it allowed them to install the Siemens scales on their existing conveyors, without the need to change or modify the belts.

- *Cost Savings:* The cost of the new belt scales was less than half of the cost of replacing the entire weigh feeders.

- *Reliability:* Siemens belt scales come with 50 years of product design and experience in tens of thousands of installations across the US and around the world.

- *Local Support:* The customer appreciated the service of an experienced field engineer who was able to go out several times during the installation for recommendations, programming and material tests. Installation included free start up and programming

- *Quick and Easy Set-up:* The ease and simplicity in programming the Siemens BW500 integrator provided a trouble-free way for the customer to stream their rate values into a PLC, which allows them to trend the rate of tomatoes being processed through different peelers.

About the WD600 Slider Bed Belt Scale

The Siemens-Milltronics WD600 belt scale is a light-to medium-duty slider bed belt scale used for process and load-out control in manufacturing, including the food, chemical and tobacco industries. It works with an existing flat belt conveyor, a selected Siemens integrator and a speed sensor.

As material is moving along the conveyor belt and travels over the belt scale, it exerts a force proportional to the material load through the suspended weighbridge to the load cells.

About the BW500 Integrator

The Siemens-Milltronics BW500 full-feature integrator is used with both belt scales and weighfeeders. It operates with a belt scale and a speed sensor. Belt load and speed signals are processed for accurate flow rate and totalized weight of bulk solids.

The BW500 integrator can take on lower level control functions traditionally handled by other devices, and it supports popular industrial communication buses. Its patented load cell balance function eliminates matching load cells.

About the WS300 Speed Sensor

The SITRANS WS300 speed sensor is a low- to high-resolution shaft-driven instrument that operates in conjunction with a conveyor belt scale, providing a signal to an integrator which computes the rate of material being conveyed. At only 2.68 lbs (1.22 kg), it is one of the lightest and most durable units ever developed for monitoring conveyor belt speed. With its rugged cast aluminum housing, it is suitable for outdoor installation, and its low weight prolongs bearing life.

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