

Emerson's Smart Meter Verification Delivers Cost Savings and Process Efficiencies to International Confectionery Manufacturer

RESULTS

- Immediate verification of plugging of Coriolis meter in challenging rework application
- Ability to pull, clean and reinstall sensors with minimal downtime
- Cost savings and process improvements compared to the process and maintenance impact of inaccurate verification of competitive meters
- Complete measurement confidence



APPLICATION

Flow measurement in caramel rework operations in US plant.

CUSTOMER

A major international confectionery manufacturer. The company produces many of the world's best confectionery brands from process facilities across the globe.

CHALLENGE

Due to the enormous growth of chocolate variations, flavors and ingredients, and the need for accurate and real-time flow measurement, flow meters have become a key element of confectionery process operations today, ensuring product consistency, repeatability and quality, and cost-effective operations.

Chocolate, or in this case caramel rework, however, comes with its own measurement challenges in processing lines, with the thick slurry often sitting in the piping system rather than recirculating, and the dangers of plugging in the meter tubing. For this reason, it's necessary to conduct regular calibration checks on all measurement sensors involved in processing, with testing results then compared to reference meters to confirm performance.

In this application, however, two competitor meters with an in-situ verification system were, for an unknown reason, providing negative flow measurements while under positive flow conditions of up to

With the sensors facing plugging challenges and negative flow measurement readings, Smart Meter Verification and its powerful diagnostics immediately failed the sensors which were then pulled, cleaned and reinstalled with minimal downtime.

15 lbs of caramel per minute. In this case, the plant operator suspected a plugged meter and wanted to confirm the inaccuracies and then generate a report to identify what modifications needed to be made to ensure the process started working again as soon as possible.

When the in-built verification system was initiated, however, it passed the meters, resulting in a situation where the diagnostics and auditors were claiming that an obviously broken system was in fact working. This called into question operations across the whole plant and had both a process and maintenance impact.

The meters still remain in place but outside the production line. More money is being expended and engineers are erroneously looking at other areas of the process – pumps and plant transfer, for example – in addition to the increasing of pressure to address the measurement difficulties. This leads to additional downtime and maintenance as well as delays on hoped for process control improvements, with the costs of inaccurate verification far reaching.

SOLUTION

The patented Smart Meter Verification diagnostics suite for Micro Motion® Coriolis flow meters provides plant operators and process engineers with powerful diagnostics through the in-situ verification of Coriolis meters without impact on process or meter outputs.

Key features include innovative algorithms that detect coating, corrosion and erosion in the meter tubing, clear and transparent verification audit trails, and automated verifications to avoid incorrect data or the ‘cutting of corners’.

In the US confectionery application, a Micro Motion® ELITE® Coriolis flow meter was deployed on a similar rework slurry line in the same plant and faced the same plugging challenges and negative flow measurement readings at a time of flow rates of up to 20 lbs of caramel per minute.

In this case, Smart Meter Verification and its powerful diagnostics immediately failed the sensors which were then pulled, cleaned and reinstalled with minimal downtime. A formal report was also generated for engineers, plant operators, auditors and – if required – regulatory bodies.

Once cleaned and reinstalled, the sensors and meter tested close to the reference meter, were passed by Smart Meter Verification, and are now fully operational and effective again delivering accurate flow measurements. Emerson also recommended that the sensor be insulated to avoid plugging in the future which was carried out by the plant operator immediately. The result was immediate measurement confidence, minimum downtime and continued operations.

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