

Process Instrumentation

The SITRANS FC430 flowmeter ensures a smooth running recovery process at the Vandemoortele plant

Since 1899, the Vandemoortele bakery and production plant has been providing the high-value frozen bakery products, packed margarines and shortenings. Employing roughly 5000 workers in 12 countries, the company owes its success to high standards of quality, innovative production technologies and a flair for finding economic alternatives. The latest example is the SITRANS FC430, a Coriolis flowmeter that Vandemoortele uses to optimize margarine utilization by recycling and returning what is not used back into the melting process.

A challenge on several levels

Margarines returned by customers and production departments are re-melted in a specific module within the return warehouse at the plant. Melted products are pumped into two large tanks. Within the tanks three layers of varying densities from inside water, grease and emulsified grease residues.

For many years, recovered grease was transferred to the nearby Cargill plant to be saponified, while the water was transferred to the sewer system. Separation of the various layers was carried out by measuring the conductivity of each liquid with the help of two level detection units. The operator used that data to determine where to transfer the product.

This method of separation method was not entirely reliable, and samples had to be taken constantly before the liquid was transferred to make sure it was flowing in the right direction. This led to considerable wastage of good fats, representing not only a loss of income, but also an unnecessary source of pollution. Given the demand for products that must not contain any blend of animal and vegetal fats, it was impossible to reuse recovered fats in the

production of margarine. Therefore that plant decided to sell the fats as biofuel. This involved improving the accuracy of the separation process considerably. In addition, Vandemoortele wanted to reduce its ecological footprint by lowering the quantity of grease transferred into the wastewater.

Siemens and Vandemoortele: an efficient partnership

Vandemoortele contacted several suppliers to find an adequate solution. When Siemens presented its new SITRANS FC430 Coriolis flowmeter, the project manager quickly understood the possibilities offered by the instrument: "The FC430 measures the specific gravity of the liquid in the tube. We are therefore finally able to separate water, grease and residues entirely. The result was Improved recovery of greases and fewer polluting substances in the wastewater."

The order was placed in November 2012. Just three weeks later, Siemens delivered the instrument. The company also chose a density measurement solution offering higher accuracy (0.0005 g/cc) in order to differentiate between the emulsion and the layer of grease.

"Thanks to the user-friendly display, system operation is intuitive," explains the operators. "The installation is almost entirely automated. This is a perfect example of a 100% reliable solution. We could not hope for more."

Convincing solution

The relationship between Vandemoortele and Siemens is excellent, and it's not surprising. According to plant management, "Collaboration has been outstanding, and Siemens has shown it is a constructive business partner. Moreover, the Siemens instrumentation team has been highly reactive, always available to provide additional information or support as needed."

The successful outcome of this project also encouraged Vandemoortele to incorporate the FC430 Coriolis flowmeter into other applications. The instrument is now being used to monitor the constant flow of cooling machines in order to guarantee quality. The project is still undergoing some improvements, but initial results are very promising. "Now, whenever we consider a new project or look at optimizing an existing process, we think of Siemens first."

Project facts

- Sector: Food & Beverage
- Customer: Vandemoortele



When Siemens presented the new SITRANS FC430 Coriolis flowmeter, Eric Myny, project manager for Vandemoortele (left in photo), quickly understood the possibilities offered by the device.

Switching to a higher gear with the SITRANS FC430

Improving efficiency for increased productivity: this was the original aim when developing the Coriolis mass flowmeter SITRANS FC430. This extremely compact measurement solution excels in performance, safety and user-friendliness and is suitable for a wide variety of fields, including the pharmaceutical, food and beverage, and petrochemical industries.

Just a few of the many features:

- Security and accuracy thanks to SIL 3 certification.
- Compact design and simplified installation allow for space saving and cost reduction.
- Extremely user-friendly interface reduces training costs and guarantees fast commissioning.
- Rugged housing and CompactCurve design guarantee an ideal measurement environment, with 0.1 % accuracy and 0.05 % repeatability.
- Quick data transfer via integrated USB port, and Digital Sensor Link on remote versions.
- Removable SD memory cards store operation and factory parameters, calibration data and certificates.
- Multi-configurable I/Os with up to 4 outputs.

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