

Micro Motion® Coriolis Flowmeters Are Ideal for Small Dose, Fast Fill Applications

RESULTS

- Reduced costly downtime associated with product changeovers
- Exceeded clients' performance requirements
- Eliminated check weighing and density sampling



APPLICATION

A manufacturer of filling equipment was developing a meter-based system to offer its clients a solution that would reduce the costly downtime associated with product changeovers.

CHALLENGE

Traditional volumetric filling systems required as many as two hours for a product changeover because each filler usually had to be manually disassembled, cleaned, and re-installed before production could resume.

The system also had to meet the performance requirements of the manufacturer's clients in the cosmetics, pharmaceutical, and food and beverage industries. These requirements included accuracy of ± 0.5 percent or better on relatively short filling cycles (less than 1 second). Product viscosity varied from water-like to over 40,000 cP. Accuracy and repeatability on super short batch times and varying product viscosity made this a challenging application.

SOLUTION

The machine designer was interested in Coriolis technology because Coriolis flowmeters measure mass flow directly and are therefore insensitive to changes in process conditions or fluid composition. At a product changeover, the operator would simply run CIP fluid through the machine and set the new fill weight.

A Micro Motion® Coriolis flowmeter was selected and tested. The Micro Motion meter performed within the customer's accuracy requirements on test batches of 250 to 1000 grams on water, maintaining a steady (no flow) zero at line pressures of 20 to 70 psi.

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Fast product changeovers save downtime and money.



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During additional testing, 60-gram batches of 1-second duration were run using face cream, at approximately 2000 cP viscosity. Over the test batches, the Micro Motion flowmeter performed at ± 0.4 percent—well within the client's requirement.

In addition to measuring mass directly, Coriolis flowmeters also measure density directly. A Coriolis-based filling system can be used to monitor product density, which is often an indicator of product quality. This eliminates manual sampling.

