

Micro Motion® Flow and Density Meters Improve Soft Drink Syrup Room Operations

RESULTS

- Improved plant throughput with faster batching of simple syrups
- Achieved consistent, repeatable syrup quality
- Reduced production time and labor costs with automated control of syrup °Brix concentration



APPLICATION

In carbonated beverage production, product quality can be greatly affected by very small variations in the quality and quantity of the ingredients. One of the most important ingredients is the primary sweetener—in the U.S. and certain other areas, high-fructose corn syrup; in Latin America and Asia, predominantly liquefied cane sugar—which is measured in percent sugar by mass on the “Brix” concentration scale.

For each flavor that a carbonated beverage producer makes, the producer starts by blending what is called a “simple syrup” from a highly concentrated sweetener, water, and proprietary concentrate. The simple syrup is then transferred to storage tanks prior to final blending and packaging. Simple syrup may also be packaged for delivery to retail outlets such as restaurants, bars, and movie theaters, where it is blended with carbonated water in fountain machines.

CHALLENGE

At a large global beverage company, simple syrups were made in large, agitated batch tanks. The company added concentrated sweetener, water, and concentrate using load cells or scales. They then took laboratory samples from the storage tank to test whether the simple syrup’s Brix concentration was within specification. If the test failed, the company reworked the batch to meet the targeted °Brix. This process was time consuming and labor intensive, reducing the plant’s overall throughput and capacity. The manual sampling process also introduced human error, which could affect the final product quality.

Micro Motion meters delivered superior concentration accuracy over the full °Brix range.

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Syrup Blending Unit



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www.MicroMotion.com/food-and-beverage
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SOLUTION

The beverage company installed Micro Motion® Coriolis meters on the sweetener and water feed lines. The ability of Coriolis meters to directly measure mass flow eliminated feed-line variations based on temperature fluctuations. More importantly, however, Coriolis meters provide a direct density measurement, which means that the sweetener Brix concentration can be measured in real-time. The beverage company used the concentration measurement to control the flow rate of the water feed, so that the simple syrup concentration always met the target °Brix specification.

The beverage company saw reduced product rework as a result of in-line, real-time concentration measurement. Furthermore, labor costs were reduced and human error was taken out of the process. Batches were completed more quickly and more consistently, which translated into higher plant throughput.

Syrup Make Up

