



APPLICATION NOTE Food & Beverage

Determining flow and Brix in the production of fruit juices

- Mass flow measurement for dosing additives
- Concentration measurement to determine sugar content
- Automated control for consistent product quality

1. Background

A European food manufacturer produces fruit juices (including pears, apricots and peaches). Besides fruit juice concentrate, vitamins and other additives are added to the mixing tanks during production. The correct dosage of each respective medium is very important in this process step. Water is added afterwards, depending on the sugar content (Brix value). The finished product is then stored in buffer tanks.



Fruit juices

2. Measurement requirements

The customer was looking for an appropriate measurement solution to monitor the dosing process and continuously determine the Brix value in the concentrate. As the media to be measured are slightly viscous, it was essential that the instrumentation had no constrictions or bends and that it caused only very little pressure loss.

3. KROHNE solution

The fruit juice producer decided to use several OPTIMASS 7300 mass flowmeters. These devices determine the mass and volume flow of additives that are added to the fruit juice concentrate. In addition, the KROHNE device also uses the integrated density measurement to calculate the sugar concentration in the fruit juice concentrate. As the OPTIMASS 7300 is a single straight tube device, flow measurement with a free cross-section is always guaranteed. This enables measurement with virtually no pressure loss.

4. Customer benefits

The OPTIMASS 7300 makes it possible for the fruit juice producer to properly dose all of the ingredients. At the same time, thanks to the Brix measurement, it is always possible to establish the right ratio of water to fruit juice concentrate and to adjust the sugar content in the finished product to the desired target value. Using the customer's PLC, the dosing and mixing processes can be automatically controlled. Consistently high product quality is thus guaranteed. The customer benefits from a mass flowmeter boasting best in class accuracy.



Brix measurement with the OPTIMASS 7300

5. Product used

OPTIMASS 7300 C

- Coriolis mass flowmeter to determine sugar content (Brix value) in juices and fruit juice concentrates
- Reliable measurement of mass and volume flow, density, temperature as well as liquids with solids content
- For hygienic applications requiring high performance
- One straight measuring tube: any installation position, self-draining, easy to clean, maintenance-free
- High degree of measuring accuracy even when process conditions change
- Certified to EHEDG and 3A
- Suitable for custody transfer (MID MI-005, OIML R117-1 etc.)



Contact

Would you like further information about these or other applications?
Do you require technical advice for your application?
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