



APPLICATION NOTE Food & Beverage

Measuring massflow and density in milk loading

- Loading excess milk onto milk lorries
- Determining the milk quantity and the separation point between water and milk
- Precise and cost-effective alternative to weigh bridges

1. Background

A French Cheese dairy periodically adapts their milk stocks to demand changes. If production has to be reduced, the cheese producer clears their stock quantity of milk by selling it to the market. For this purpose, the milk is directly loaded onto milk lorries (tank trucks) for delivery. During the loading procedure the milk is pushed through the line using water.

2. Measurement requirements

In order to measure the milk quantity as accurately as possible, the cheese dairy was looking for a suitable measurement solution that was also able to precisely determine the density of the milk loaded (1025...1040 kg/m³ / 64...65 lb/ft³). In this way, the separation point between water and milk could be identified so as to ensure only milk was loaded onto the trucks. The cheese dairy considered using either a weigh bridge or a flowmeter complying with their hygienic requirements.



Milk lorry

3. KROHNE Solution

The customer decided in favor of the OPTIMASS 7300 C Coriolis mass flowmeter. The meter allows for continuous measurement of mass flow and density. Once the specified quantity of milk has been reached, the filling process stops automatically. The switch-off point between milk and water is determined by the integrated density measurement. The OPTIMASS 7300 is a single straight tube meter and is manufactured in accordance with the requirements of the food and beverage industry. It is easily drained and cleaned using CIP/SIP.



Recording of the delivered quantity

4. Customer benefits

Using the OPTIMASS 7300 the cheese dairy benefits from significantly more accurate and reliable measurement of the milk quantities. The integrated density measurement enables the customer to control the milk loading process automatically and without water entering the trucks. The maintenance-free mass flowmeter from KROHNE also offers the customer substantial financial advantages when compared to a weigh bridge which would have caused much higher installation and operating costs.

5. Product used

OPTIMASS 7300 C

- Coriolis mass flowmeter for the accurate measurement of mass and volume flow, density, temperature, concentration and liquids with solid content
- Straight tube without constriction
- Supports a wide range of industry standard hygienic connections
- For demanding applications
- Easily drained and easy to clean, irrespective of the type of construction and process influences
- Excellent zero stability
- Rapid signal processing, even with product and temperature changes
- Modular electronics with data redundancy – "plug & play" replacement of electronics



Contact

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