



APPLICATION NOTE Food & Beverage

Dosing of pork fat and water in the production of animal feed

- Coriolis mass flow measurement of ingredients for animal nutrition
- No risk of clogging due to twin straight tube meter design
- Replacement of turbine meter to increase production efficiency and product quality

1. Background

A French company is specialised in the manufacture of animal nutrition. Pork fat and water are essential ingredients of their animal feed products. Constant dosing of the media is paramount to receiving the desired product quality.

2. Measurement requirements

In order to guarantee this, pork fat and water must be continuously measured during the dosing process. Unlike water, pork fat is a rather adhesive medium with a density of 700 kg/m^3 (ca. 43.7 lb/ft^3) and a viscosity of 20 mPas . The flow rate is $200 \dots 1500 \text{ kg/h}$ (ca. $7.3 \dots 55 \text{ lb/min}$) at $3 \text{ bar} / 43.5 \text{ psi}$. For many years, the customer used a turbine meter to master this dosing application. However, this device often needed cleaning due to clogging. Thus, the turbine meter required significant and costly maintenance and caused process interruption affecting the whole production process. The customer was therefore looking for a maintenance-free flowmeter capable of measuring the pork and water reliably and with a good degree of accuracy.

3. KROHNE solution

Having already made good experience with one of KROHNE's electromagnetic flowmeters in another application, the customer once again turned to KROHNE for advice. The manufacturer and supplier of industrial process instrumentation recommended using the Coriolis mass flowmeter OPTIMASS 1300. The twin straight tube meter was provided with stainless steel tube (DN25 / 1") and fitted with electric heating to keep the pork fat at temperature. Due to its construction without moving parts, the meter allows self-draining.

4. Customer benefits

Unlike the turbine meter previously used, there is no clogging with the OPTIMASS 1300. The customer benefits from increased production and reduced maintenance costs as process interruption is no longer an issue. In addition, the KROHNE mass flowmeter helps the customer gain a much better and more stable product quality. Adding only as much pork fat as necessary, the customer also saves on this ingredient in the end. As the OPTIMASS 1300 is a cost-effective, yet accurate ($\pm 0.15\%$) device compared to other lower cost meter ranges on the market, the customer also benefits from a much more accurate dosing.

5. Product used

OPTIMASS 1300

- Coriolis mass flowmeter with twin straight tube design for universal and hygienic applications
- Mass, volume and density measurement of (non-)conductive liquids and gases
- Best price/performance ratio of its class
- With optimised flow divider for low pressure loss
- DN15...100 / ½...4"; PN100 / ASME Cl 600 lb
- PED approved secondary containment: max. 100 barg / 1450 psig
- Immunity to crosstalk: resistant to installation and process effects
- On-site verification of flowmeter with USB powered verification tool OPTICHECK
- EHEDG, 3A, FDA, EC 1935/2004
- ATEX, FM, CSA, NEPSI, IECEx etc.
- HART®, FOUNDATION™ fieldbus, PROFIBUS® PA and DP, Modbus



Contact

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