



APPLICATION NOTE Chemical Industry

Mass flow measurement in wax production

- Reliable and accurate mass flow measurement
- Improving product quality even with varying process conditions
- Easy cleaning and absence of maintenance requirements for an uninterrupted product process

1. Background

A British wax producer wanted to improve the quality of the wax products produced at their plant. The company produces various wax products and additives, including those for the manufacture of castings, for fusion adhesives, for candle production and for domestic polishes. Several wax types have to be mixed with different additives for each product formula. In order to ensure efficient production of the different final products, the mechanical measuring devices upstream of the mixing tanks had to be replaced by modern measuring devices.

2. Measurement requirements

Problem free measurement of the process data listed below was required from the new electronic devices. Equally, manufacturing accuracy had to be improved, in order to make the quantities of wax and additives used in the mixing process more effective, thereby increasing the quality of the final products and providing a benefit for their customers.

Product and process characteristics

- Density 800...1000 kg/m³
- Viscosity 5.5...1200 cP
- Pressure 1.4...4.1 bar
- Temperature 20°...120° C
- Mass flow 1.8...15 t/h

3. KROHNE Solution

For this application, KROHNE supplied the OPTIMASS 7300 F mass flow straight tube meter (F = remote version). The Titanium measuring tube, guarantees an interruption-free operation at process temperatures between -40° ... $+150^{\circ}$ C and operating pressures up to 100 bar. In order to be able to adjust to various production temperatures, the meter was supplied with a heating jacket that can be operated with hot water or steam. In spite of varying process conditions, the measuring accuracy remained constant at $\pm 0.1\%$ of the measured value. The obstruction-free straight tube prevents a build up of deposits and blockages. The device is self-draining, easy to clean, and maintenance-free.

4. Customer benefits

Using the OPTIMASS 7300 F from KROHNE, the wax production quantities could be measured with much greater accuracy. This facilitated more efficient control both of product quality, and also the quantity of finished products delivered to the customer. And that in spite of different pressure and temperature ratios, media properties, and complex and difficult production methods.



Mass flowmeter OPTIMASS 7300 F

5. Product used

OPTIMASS 7300 F

- The only mass flowmeter with a single straight measuring tube available in Stainless Steel, Hastelloy®, Titanium and Tantalum
- Minimal pressure loss
- Reliable measurement of mass and volume flow, density, temperature, concentration and solid content
- No installation restrictions, easily drained and easy to clean
- High accuracy even with product, viscosity and/or temperature changes



Sensor OPTIMASS 7000 F

Converter MFC 300 F

Contact

Please visit our website for a current list of all KROHNE contacts and addresses.



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