APPLICATION NOTE

Food & Beverages

Automated filling of mixing tanks for bird food

- Non-contact level measurement over a very small measuring range
- Stable measurements on extremely agitated surfaces
- Continuous measurement to optimise mixing capacity

1. Background

Suet cakes are part of the product range of a manufacturer of animal food. In winter they are hung out as a food source for wild birds.

Suet cakes are made of a mixture of different grains, meal, lime, sunflower seeds and additives. The ingredients are mixed in tanks using two augers turning in opposite directions. Once they are extracted they are pressed into a ball and flash frozen.

2. Measurement requirements

The operator wants to automatically fill the mixing tanks with the raw products. This requires continuous monitoring of the level in the open mixers. Up until this point, the level had been determined manually or using visual judgement.

KROHNE

3. KROHNE solution

First, as a test installation, an OPTISOUND 3010 ultrasonic level meter was installed on a mixing tank. The device measures the level from the top continuously and without contact and indicates the value via a 4...20mA output.

In addition to the small measuring range, this application was particularly challenging due to the extreme agitation of the surface as the mixture is constantly being thrown up by the augers.

OPTISOUND 3010 above the mixing tank, one of the augers can be seen.

Automated filling: The filling ramp can be seen in the background.

4. Customer benefits

The test installation was successful: Despite the agitation of the product, the OPTISOUND provides reliable and stable measurement, enabling automated filling. Continuous measurement means the added amount can always be accurately controlled. Hence the mixer is used at optimal capacity. The operator was satisfied with the solution and plans to equip all of the mixing tanks with OPTISOUND devices.

5. Product used

OPTISOUND 3010
Ultrasonic level meter for liquids and bulk goods

- Continuous, non-contact measurement without process interruption
- Measuring range from 0.25 to 2 m for solids, 0.25 to 5 m for liquids
- Process temperature -40...80°C
- Variants available for measuring ranges up to 15 m

Contact

KROHNE S.A.S.
Les Ors – BP 98
26103 ROMANS Cedex
France
Tél. : +33 475 054 400
Fax : +33 475 050 048
info.france@krohne.com

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

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