# Micro Motion® Flowmeters Improve Bakery Mix Consistency and Reduce Waste

## RESULTS

- Dramatically improved accuracy leads to better product quality
- Accurate blends reduce production costs
- Reduced maintenance and downtime
- Reduced product waste

## APPLICATION

In the baking industry, ingredients work together to create the desired structure and texture of quality products. Each component affects the others, and if used at improper levels, can destroy the product.

Baking requires strict compliance to scaling guidelines and recipes, production times and temperatures. Ideal production conditions and proportions differ for nearly every bakery item. The quantities need accurate measurement and control.

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Recent trends in the baking industry have introduced more liquid ingredients, which has allowed measurement by flowmeter, rather than manual weighing of ingredients such as fat, or improvers and conditioners.

## CHALLENGE

Frequently bakery ingredients have been measured using high maintenance moving parts flowmeters such as positive displacement meters. While reasonably accurate when measuring liquid volume, they do not take into account any of the possible temperature and density variations of typical ingredients, and hence the actual mass delivered into the mix can be incorrect.

Micro Motion®

For more information:
www.EmersonProcess.com/solutions/food_bev
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Process Management

## SOLUTION

Micro Motion® multi-variable flowmeters bring advantages across many bakery applications. A few examples are:

1. Improved Accuracy: By replacing mechanical volumetric meters with Micro Motion multi-variable mass flow and density meters, the overall system accuracy and control is demonstrably improved. This saves cost and money in ingredients, improves product quality by accurate blending, and reduces waste. Elimination of older moving part mechanical meters reduces maintenance and avoids sudden equipment failures, with the consequent down-time.

2. Biscuit Oil Spray: Conveyor belt transporting biscuits, crackers and confectionery are sprayed with oil to create a carrier or to add flavor. Unused oil drips through the conveyor and is returned for re-use. A Micro Motion meter on the tank auto-fill line measures the oil being picked up by the product. Oil is expensive, and while it is it is important not to over-spray, it is equally important to ensure that insufficient oil does not result in underweight, poor quality products.

3. Fat in Bread Mixes: Fat was once added to the bread mix by cutting a slice of solid fat, weighing it and trimming until correct. Now Micro Motion multi-variable flowmeters are installed to monitor the fat added using an automated system, improving accuracy and hygiene, while reducing handling. Typical mixtures of around 880 grams of fat are being dispensed to an accuracy of 5 grams using one of the lower-cost Micro Motion meters. This is independent of the fat properties and density: variations in these badly affected the volume dispensing meter systems previously used.

4. Bread Tin Greasing: Micro Motion multi-variable flowmeters ensure that the right amount of grease is added to the tin, in order to ensure easy removal of the loaves after baking. “Over–oiling” of baking tins is not a viable alternative in the current very competitive market conditions.

5. Yeast Fermentation: Micro Motion multi-variable mass flowmeters measure product density in the line, and can be used to monitor both sugar solution concentrations, and yeast condition. This can ensure the yeast is in the correct condition for use in the process. The meters are then used to dispense the correct volume of yeast to the process.