Micro Motion® Coriolis Flowmeters Eliminate Manual Control and Improve Pet Food Quality

RESULTS

- Improved quality and consistency
- Eliminated manual measurement and error
- Streamlined, more accurate process
- No moving parts, eliminating measurement degradation

Micro Motion meters improve accuracy and eliminate the need for operators.

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APPLICATION

Three basic types of pet foods are produced today: wet, dry and semi-moist. Manufacturers of dry pet food produce it through the extrusion process. This process allows pet food to be efficiently processed into a variety of shapes, forms, colors and textures.

Producing high-quality pet food requires continuously adding each of the numerous ingredients in the correct ratio to the extruder. Following the extrusion process, the correct proportion of fat is applied to the product.

The major ingredients in pet food are animal by-products and various cereals. The proper combination of proteins from animal by-products imparts functional characteristics to pet food, including texture, mixing qualities, odor and taste. Ground bones offer the calcium phosphorus and trace minerals pets need. Color is added to enhance product appearance. Proper levels of lard or grease enhance flavor and supply the dietary needs of linoleic acid, a fatty acid essential for the nutrition of some animals.

CHALLENGE

A pet food producer was adding ingredients to the extruder with variable speed pumps. An operator continually monitored the addition of ingredients and varied pump speeds to accomplish the proper rate of additions. When pumping abrasive materials, such as ground bone meal, pump impellers wore down significantly.

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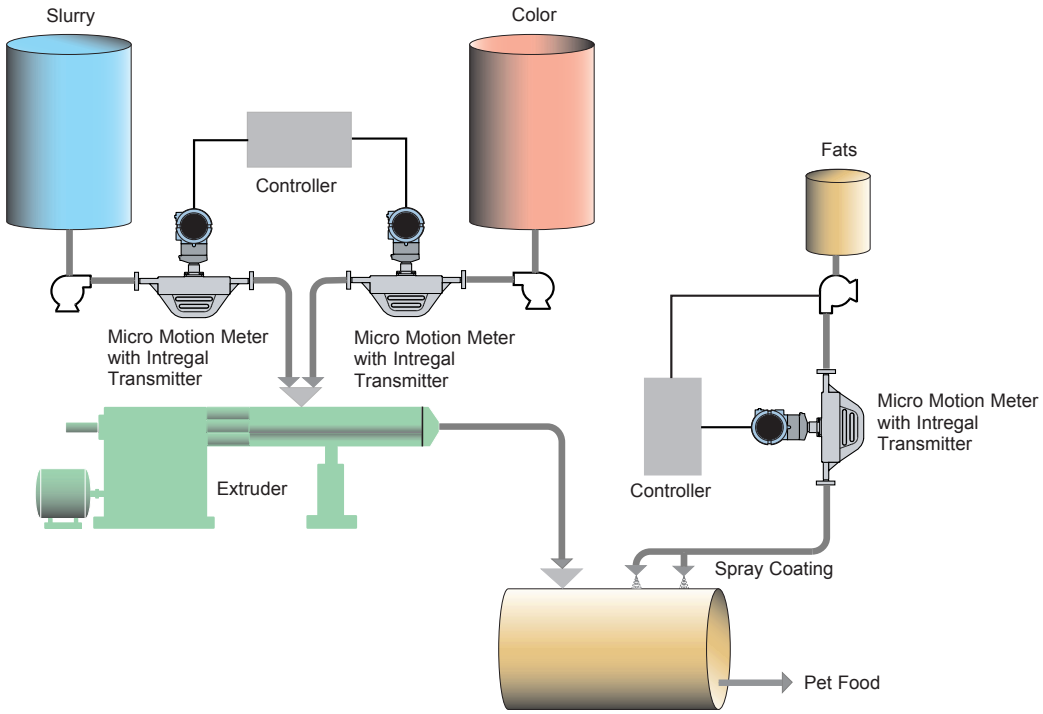
With this wear, as pump rates slowly degenerated, the operator was required to continually monitor and make adjustments. Once each shift, the operator weighed a timed sample from each pump to verify flow rates. This method of operation was not only time consuming, but was extremely susceptible to operator error. Additionally, using the pump speed for rate control resulted in a mass balance error when the ingredient temperature changed.

SOLUTION

The company elected to install Micro Motion® Coriolis flowmeters on all ingredient lines to the extruder. With Micro Motion meters, the various ingredients are ratio-blended directly using mass measurement. This yields better control of the final product.

The non-intrusive design of a Micro Motion Coriolis flowmeter, with no moving parts, eliminates measurement degradation. The mass flow signal is fed into a closed loop controller, which controls the pump speed. The rate of ingredient addition is accurately controlled on a continuous basis. This process automation accounts for wear in the pump over time due to abrasion; and ingredient flow rates are accurately maintained regardless of pump wear over time. Automation of the system also frees the operator from sampling every shift. This allows the operator's time to be spent on other tasks.

The Micro Motion solution provided the company with the most important commodity — a consistently high — quality product.



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