



Polymer Plant Gains \$55,000 by Measuring Concentration of Hexamethylenediamine



Application

A manufacturer of a wide range of polymers, which are used in a wide variety of products including film, packaging, sneaker soles, hose, and tires has a need to measure the concentration of hexamethylenediamine (HMD). The HMD, supplied by Invista and BASF, is one of the feed stocks used by the polymer manufacturer. Currently, the manufacturer receives the HMD via rail cars. The HMD is pumped from the cars into a holding tank and then diluted to 85% concentration. The manufacturer has been using load cells to adjust the pump speed to deliver the required mixture. This assumes that the HMD concentration is constant.

RESULTS

Saved \$45,000 by eliminating batch reworks

Reduced operating expenses by \$10,000

Better system integration with FOUNDATION fieldbus™



Challenge

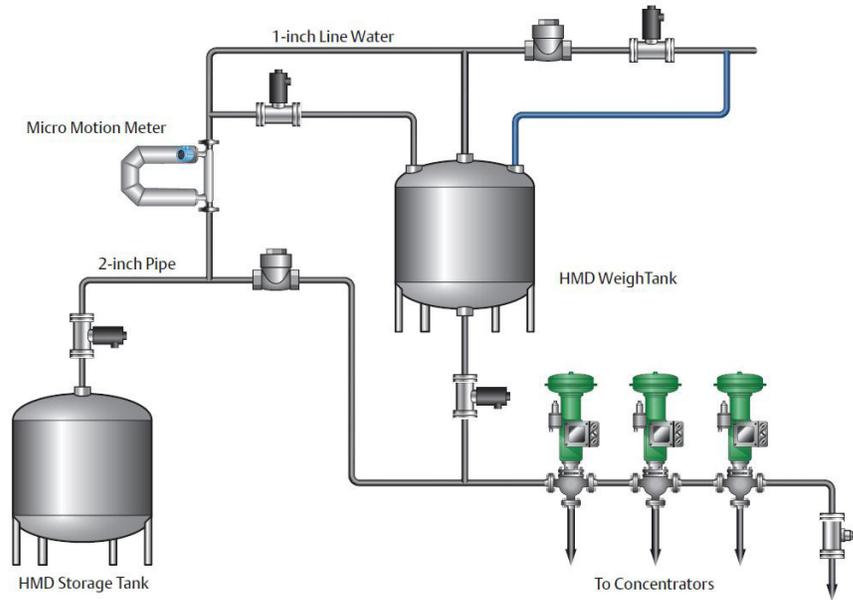
With their existing equipment, the manufacturer has been unable to accurately track the actual HMD concentration. When the HMD mixture is diluted too much, it has a negative effect on product quality, leading to batch reworks. When the HMD mixture is not diluted enough, the plant wastes HMD.

In addition, the load cells have ongoing maintenance and calibration requirements that add expense to the operation.



Solution

The polymer manufacturer installed a Micro Motion Coriolis meter with FOUNDATION fieldbus and the concentration measurement application. The transmitter was loaded with a concentration curve of 70–100% with a temperature range of 75–120°F. The isotherm information for the concentration curve was obtained through consultation with Invista. This curve allowed the meter to accurately measure the HMD concentration. The fieldbus output of the meter integrates with the entire control system of the polymer plant. Using this setup, the customer has been able to eliminate batch reworks and reduce their usage of HMD by 2%. Long-term, the customer plans to lower its costs even more by phasing out the use of the load cells entirely.



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