

ABB Vortex flowmeter

Optimizing combustion in a lime oven

Optimizing combustion in a lime oven in a sugar factory with the FV4000 Vortex flowmeter

The challenge

To optimize combustion in a lime oven, the air flow must preferably be captured in standard units such as scfm. The air is sucked in from the atmosphere, with the pressure being virtually constant at approx. 1 bar (abs.) / 14.5 psia. Due to variations in the outside temperature, the temperature can fluctuate around 20 ... 30 Kelvin. This can result in deviations in the order of up to 10 % when converting to standard conditions with a constant value.



The solution

The FV4000-VT4 Vortex flowmeter with integrated temperature sensor in the flowmeter sensor provides a cost-effective solution to this problem. In the designated operating mode, the ambient pressure is stored in the transmitter as a fixed absolute value and the measured temperature is taken into account accordingly when the standard flow is calculated. Although an alternative solution involving external pressure and temperature compensation would certainly be a few tenths of a percent better, the additional effort required would be out of all proportion to the result achieved in this application.

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