

MSM400 replaces Coriolis mass flowmeter for effective flue gas desulphurisation

CUSTOMER BENEFITS

- Lower cost solution by replacing Coriolis mass flow meter
- Insensitive to flow rate
- Removes the need for bypass piping
- Helps plant achieve low SO₂ missions



Sulphur dioxide emissions – formed during the burning of coal and oil in power plants, and from waste to energy plants – are tightly controlled by many governments globally. Flue gas desulphurisation removes sulphur from the flue gasses to minimise its release into the environment. Several methods exist, one of the most popular of which is to ‘scrub’ the gas within an absorber tower. This process commonly pumps exhaust gas through a shower of limestone, which combines with the sulphur dioxide to withdraw it from the exhaust gasses. Throughout the process, the limestone slurry must be measured and controlled to ensure its correct density. This is commonly measured at inlet and during recirculation.

CHALLENGE

Qu Dong power plant, part of the Hua Power Group in China, had been using Coriolis mass flowmeters to measure the density of its limestone slurry. However, it found that the technology was too sensitive to the flow rate. Attempts at using by-pass loops to slow the flow rate led to additional leak points within the piping, causing further aggravation. The company was unhappy with the mass flow meters and needed an alternative technology that would be insensitive to the flow rate but still give the accuracy it required.

SOLUTION

Learning that Delta Mobrey’s MSM400 was insensitive to the flow rate, Qu Dong decided to try this alternative method to measure its slurry density. As a trial, it installed transmit and receive sensors either side of its pipe. The sensors work by measuring the attenuation of an ultrasonics signal through the fluid to determine the density of the slurry in terms of percent undissolved solids.

Case Study

Industry: Power

Challenge: Flow Rate Insensitivity



The trial solution was successful, and the plant has since replaced further mass flow meters with the MSM400 controller and pipe sensors.



MSM400

- Provides continuous measurement of sludge or slurry density
- 4–20 mA / HART output signal of measured value
- Gives a bright and clear indication of the measured value in poor light conditions
- Choice of sensors for tank insertion or pipeline sensors for in-line density measurement

About Delta Mobrey

For more than 100 years, Delta Mobrey Limited has been a world-leading specialist in the design and manufacture of quality process instrumentation for the measurement and control of fluids and gases in all industrial plant and equipment.

Trusted quality – proven value: quality and reliability have always formed the cornerstone of our success, recognised by industry with international approvals covering every aspect of our manufacturing and product portfolio, together with certifications spanning all areas of hazardous and regulated environments.

Global team – local support: as a global organisation, Delta Mobrey is totally committed to delivering the best possible customer service and technical support, ensuring a lifetime value of ownership, together with a flexible and responsive approach to meet our customers' individual demands.

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