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Application note Steel Industry (France)

Decrease coke gas consumption - hot strip mill

Benefits:

- No pressure drops
- Robust solution
- Fits in tight space
- Standard flow measurement
- Wide flow range

Summary

A French Steel Mill had to comply with the European environmental regulations as well as to monitor, control and decrease its energy consumption to reduce its production costs.

The coke gas, a bi-product of the coke oven supply to the hot strip mill ovens, is a strategic location to engage with energy optimization. Coke gas is less rich (lower calorific value) than natural gas and but is largely used in every steel mill to limit the purchase of natural gas from gas distributors.

Application

Coke gas

Pipes: Carbon steel from DN200 to DN600 (8" up to 24")

Q: From 2,000 Nm3/h to 8,000 Nm3/h

Temperature: From 20°C to 40°C

Pressure: 6 kPa (0.11 psig)

Challenge

Customer challenges are meters with very low pressure drop due to low pressure, limited space available between the pipes (rack), standard flow required (needs pressure and temperature correction) and enough rangeability.

Solution

The Panametrics XGM868i ultrasonic flow meter solution is perfectly suited:

- No pressure drop
- Very large turndown ratio

- No moving parts
- Advanced diagnostics

Normally installed in a diagonal setup, a T5 90/180 set up was proposed instead. It makes the footprint shorter, and allows access from the top of the flowcell. In addition, both transducers are self-draining.

Results

The titanium transducers have shown to be very resistant to gas contaminants. Coke gas is not clean, and from experience we know the transducers should be cleaned every 3 years.

The customer installed 20 pieces of XGM868i with T5 transducers. They maintained close relationships with Panametrics sales rep and continue to use Panametrics flow meters with coke oven gas measurement throughout the customers' plant.

Per avere più informazioni
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