

Clamp-on application for Vinyl Acetate Monomer (VAM) in a Purified Terephthalic Acid (PTA) plant

Summary

This existing Panametrics customer operates a PTA plant in China with 2 million tons of PTA production per year. With a flow meter installed base at the plant, Panametrics has a long and successful relationship with the customer thanks to the reliability and accuracy of Panametrics flow meters.

However, the customer wanted to introduce flow meter measurements for a complex application. It asked Panametrics to look into potential flow meter solutions.

Challenge

Vinyl acetate is highly corrosive with flowing temperatures exceeding 200°C. Due to this fluid's characteristics and the titanium piping, it was difficult for the customer to find a suitable flow meter at a reasonable price.

After evaluating various technologies, the customer reached out to Panametrics to find an ultrasonic solution.

Panametrics originally recommended its BWT technology, but due to the premium alloys needed to manufacture a wetted flow meter, it exceeded the customer's budget. Panametrics subsequently recommended a clamp-on solution. However, the customer was not convinced the solution would be successful. Therefore, Panametrics carried out a trial on site to prove the technology.

Benefits:

- Low Maintenance
- Zero pressure drop
- No process interruption
- Long term stability and drift free



Solution

To quickly validate performance, the Panametrics Team used a portable TransPort PT878 ultrasonic flow meter with a C-PT 1Mhz transducer in dual traverse mode.

The trial was very successful. The flowmeter readings were very stable and were in line with the customer's expectations. Despite being initially somewhat skeptical, the customer was impressed with the reliability, accuracy and convenience of Panametrics clamp-on technology.

As a result, Panametrics has been added to the customer's approved vendor list for this application and has received a significant order for PanaFlow LC, fixed clamp on flow meter.

Specifications (OPT)

Medium	VAM
Pipe Diameter	DN400 (16"), WT 9mm (0.354")
Pipe material	Titanium
Fluid Density	859 kg/m ₃ (53.63 lb/ft ₃)
Process Temperature	210°C (410°F)
Viscosity	0.23 cP
Flow Velocity	0.46 to 5.49 m/s (1.5 to 18 ft/s)

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