

Liquid clamp on for water measurement in the Semiconductor industry

Summary

In today's world, chip demand is at a record high, exacerbated by the impact of the pandemic and the ever-increasing demand for digital technology. As a result, the semiconductor industry is one of the fastest growing industries.

Panametrics was approached by an automation contractor on behalf of BOE, a leading manufacturer of LCD and OLED displays, to provide flow meters for a greenfield project manufacturing foldable OLED displays. Hundreds of flowmeters were required across the various project milestones.

Challenge

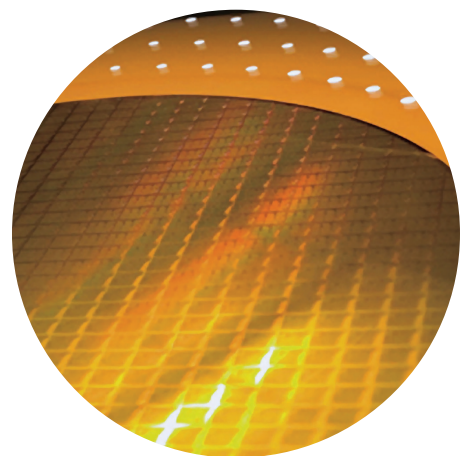
In the semiconductor industry, there are many water applications. From ultra-pure water used for cleaning to cooling water for HVAC as well as raw water and sewage water typically treated directly in the site wastewater treatment plant. All these applications require flow measurements to provide the customer with better process control and for reporting purposes to the local authorities. Therefore, flowmeters play an important role.

The key requirements for both the automation contractor and the end user, BOE, were:

- Ability to measure non-conductive media like ultra-pure water
- Reliable and stable measurement for process control
- Easy to install and set up
- Maintenance free
- Digital communication capable (HART)
- Versatile to fit various pipe sizes and pipe materials

Benefits:

- Zero contamination risks
- No Interruption to operations
- Low Maintenance
- No pressure drop
- Long term stability and drift characteristics
- Bi-directional measurement



Applications

Fluid:	Various water lines
Pipe Size:	From DN50 to DN1600 (2" to 64")
Pipe Material:	CS, SS, various plastic pipes
Process Temperature:	7°C ~ 25°C (44°F ~ 77°F)

Solution

Partnering with the Panametrics team, the customer selected Aquatrans AT600 Clamp-on ultrasonic flowmeters with 2Mhz, 1Mhz, 0.5Mhz transducers in a dual traverse set up for best possible performance with:

- 2Mhz for pipe sizes $\leq$ DN50
- DN80 $\leq$ 1Mhz $\leq$ DN800
- 0.5MHz $\geq$ DN850

From 2019 to 2021 BOE ordered more than 500 AT600 flow meters with HART protocol.

The customer is satisfied with Panametrics technologies and the measurement results. Panametrics is now an approved supplier for BOE.

