SPARTAN CONTROLS

Bubbler Systems

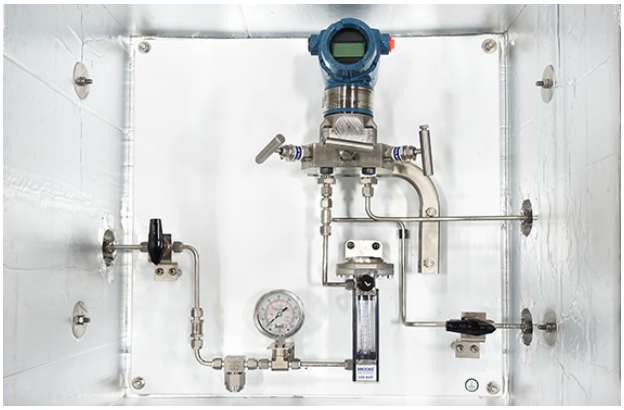
For Liquid Level Measurement

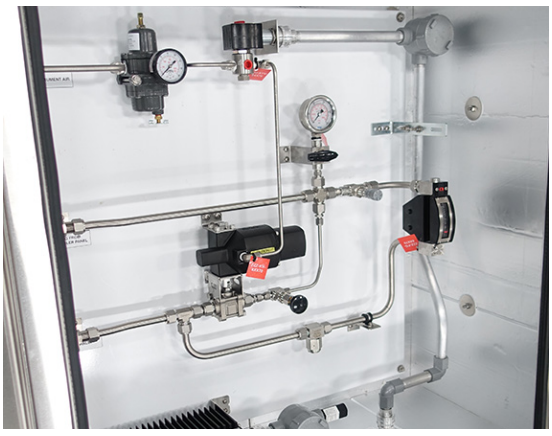
Our custom-designed bubbler systems for liquid level measurement are suitable for measuring the level of various liquids, including water, viscous fluids, slurries, sewage, liquids with suspended solids, and sludge. These systems are reliable and robust as they have no moving parts. They have been tried and tested for many years and are an economical solution for a wide range of environments.

Applications

Liquid level measurement:

- Open-top or vented tanks
- Wells (level and feedback for intake pumps)
- Wastewater systems
- All types of liquids
- Can be used in place of other technologies such as radar and float





Advantages

- Reliable and long-lasting. The bubble tube is the only part in contact with the process fluid. The transmitter sensor is not in contact with the fluid, creating a longer life and greater accuracy
- Measurements are not affected by solids, surface foam, temperature, pH, or conductivity. - High accuracy
- Suitable for use in corrosive applications
- Maintenance is minimized when integrated with an automated purge line for the bubble tube

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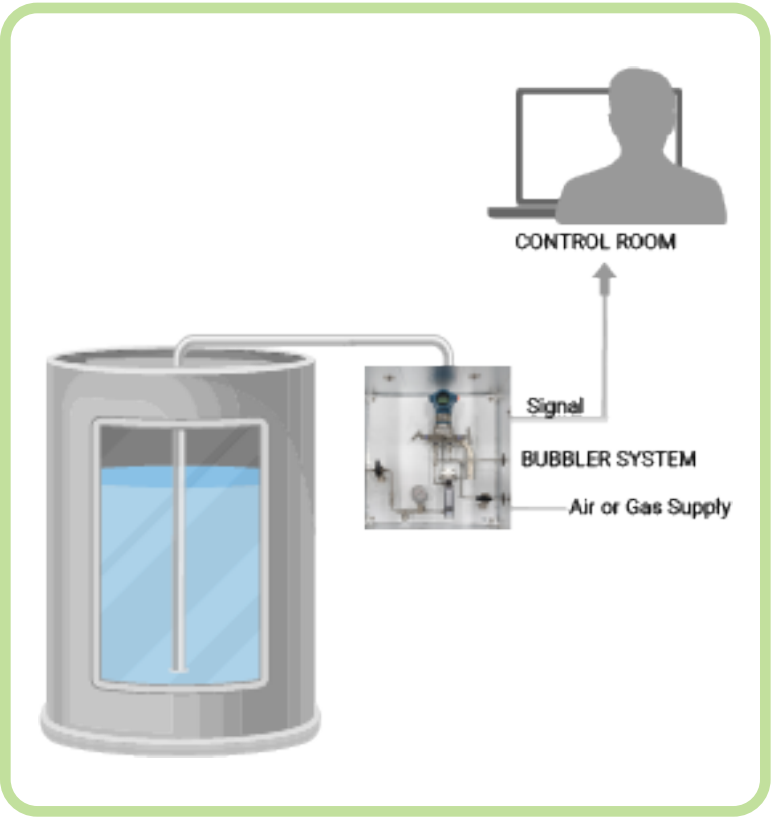
How it Works

The bubbler system works by forcing a gas at a near-constant flow rate out of the bottom of an open tube (bubble/dip tube) that is submerged in liquid. The back pressure in this tube is then measured. With the density of the process liquid known, the level can be calculated using the back pressure and density. A pressure transmitter converts the back pressure into a 4-20mA output to a controller, which calculates the liquid level.

As the liquid level increases, the head pressure on the bubble tube increases. This means that more pressure is needed to maintain a constant flow rate to overcome the pressure of the fluid. Conversely, if the fluid level decreases, the head pressure on the bubble tube and the pressure required to maintain a constant flow rate of air or gas also decrease. To minimize maintenance requirements, a purge line can be added to clear the bubble tube of debris and buildup. This can be a manual operation with the push of a button or automated with a purge schedule and timer.



Additional Features

As with all our solutions, the bubbler system can be fully customized to meet the specific requirements of our Customers. We also offer additional options, such as:

- Stainless steel NEMA 4X enclosures
- Fully insulated and heated for outdoor use
- Single or multi-level measurements
- Adjustable set points
- Hi/low alarms
- Alarming back to controller
- Indicating lights
- And many more

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