Bubble Tube Purge for Level Measurement

Description of Application

One of the most widely used methods of monitoring/controlling liquid level in a tank is the use of Bubble Tubes with Pressure or Differential Pressure Transmitters. A small, but uninterrupted flow of air or inert gas is forced down through a dip tube which extends to near the bottom of the tank. The back pressure of the introduced gas is a function of the liquid level or head in the tank.

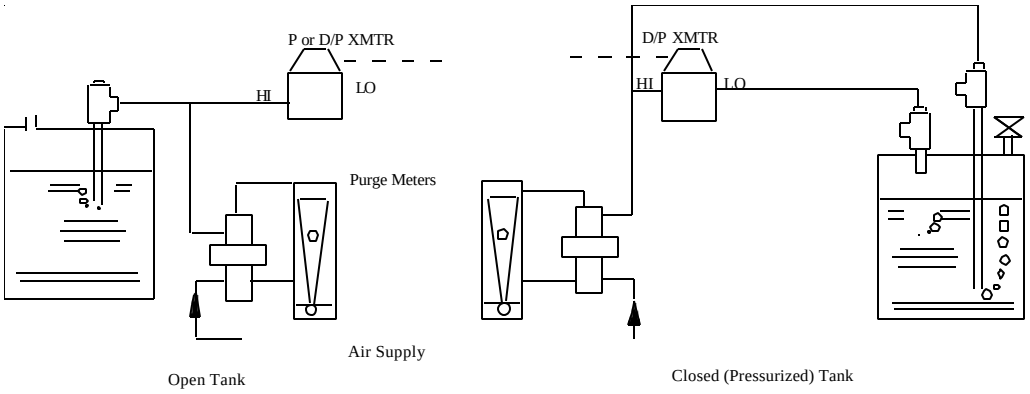
Where Used

Chemical Companies
Food & Beverage Companies

Rotameter Solution

The use of a Purge type Rotameter is the least expensive and most convenient way to set and monitor the flow of air or inert gas into the Bubble Tube.

How Installed



Method Of Operation

A small, but uninterrupted flow of air (or inert gas such as nitrogen) is easily set and monitored by the use of a Purge Type Rotameter. The flow rate must be low to insure no increase in head back pressure due to pressure drop through the purge piping and dip tube. Conversely the flow cannot be interrupted or the back pressure may decrease below that of the head giving an incorrect level reading and possibly allowing the process liquid to reflux back to the purgemeter and ∆/P Transmitter. Note that controlling the exact flow rate is not critical. The flow rate must be low and uninterrupted. The purge supply gas pressure must exceed the maximum line pressure by about 10psi.

Model Selection

Use Purgemaster Model 10A6131N with a differential pressure flow controller. For most applications, the standard 2 SCFH air capacity is suitable. An alternate method is to use a Model 10A6131M with a pressure regulator on the supply side. The fittings may be brass for air or inert gas, but stainless steel may be preferred by the customer. For pressures above 250psig use Model 10A3220.