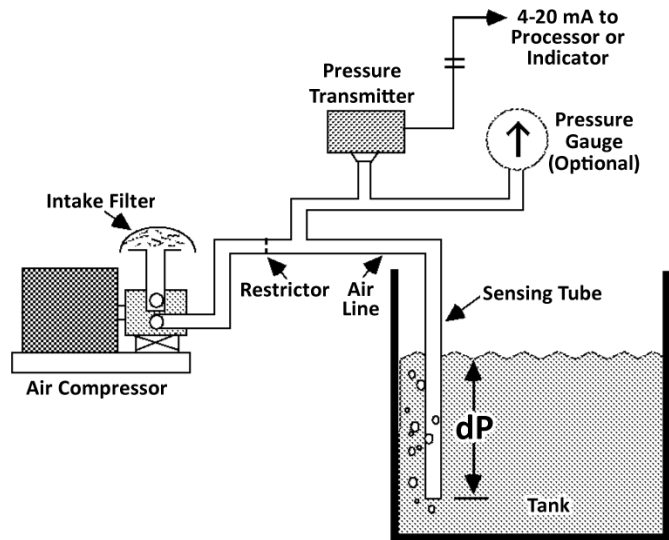


Bubbler Systems for Liquid Level Measurement

The sensing tube is installed in your tank, and connected to a pressure transmitter and the air supply through a flow restrictor (as shown above). Because the pressure required to displace the liquid is determined by the depth of the fluid, the transmitter output indicates the fluid depth above the open end of the tube.

If the fluid level is above the air supply and pressure transmitter, it may be necessary to install a check valve at the high point in the air line, to prevent syphoning of the fluid back to the transmitter and compressor in the event of power failure.



Calculating Maximum Fluid Depth

If the fluid in your bubbler is not water, you'll need to use the following formula to determine true maximum depth:

$$\frac{\text{Max depth above end of sensing tube (water, SG=1)}}{\text{Liquid specific gravity}} \times \frac{(mA - 4)}{16} = \text{Depth of fluid (inches) above end of sensing tube}$$

Specific Gravity of Common Liquids

Liquid	SG	Liquid	SG	Liquid	SG
Acetic Acid	1.06	Fluoric Acid	1.50	Palm Oil	0.97
Alcohol, Commercial	0.83	Gasoline	0.70	Petroleum Oil	0.82
Alcohol, Pure	0.79	Kerosene	0.80	Phosphoric Acid	1.78
Ammonia	0.89	Linseed Oil	0.94	Sulfuric Acid	1.84
Benzene	0.69	Mineral Oil	0.92	Tar	1.00
Bromine	2.97	Muriatic Acid	1.20	Turpentine Oil	0.87
Carbolic Acid	0.96	Naphtha	0.76	Vinegar	1.08
Carbon Disulfide	1.26	Nitric Acid	1.50	Water	1.00
Cottonseed Oil	0.93	Olive Oil	0.92	Water (Sea)	1.03

For a more complete list of liquid specific gravities, see the Lesman catalog reference section, page 490.