

## Rotameters and Bubble Tube Purge for Level Measurement

**Industry:** Chemical Companies / Food and Beverage Companies  
**Product:** Rotameter Flow Meters with Flow Controllers

### Description of Application

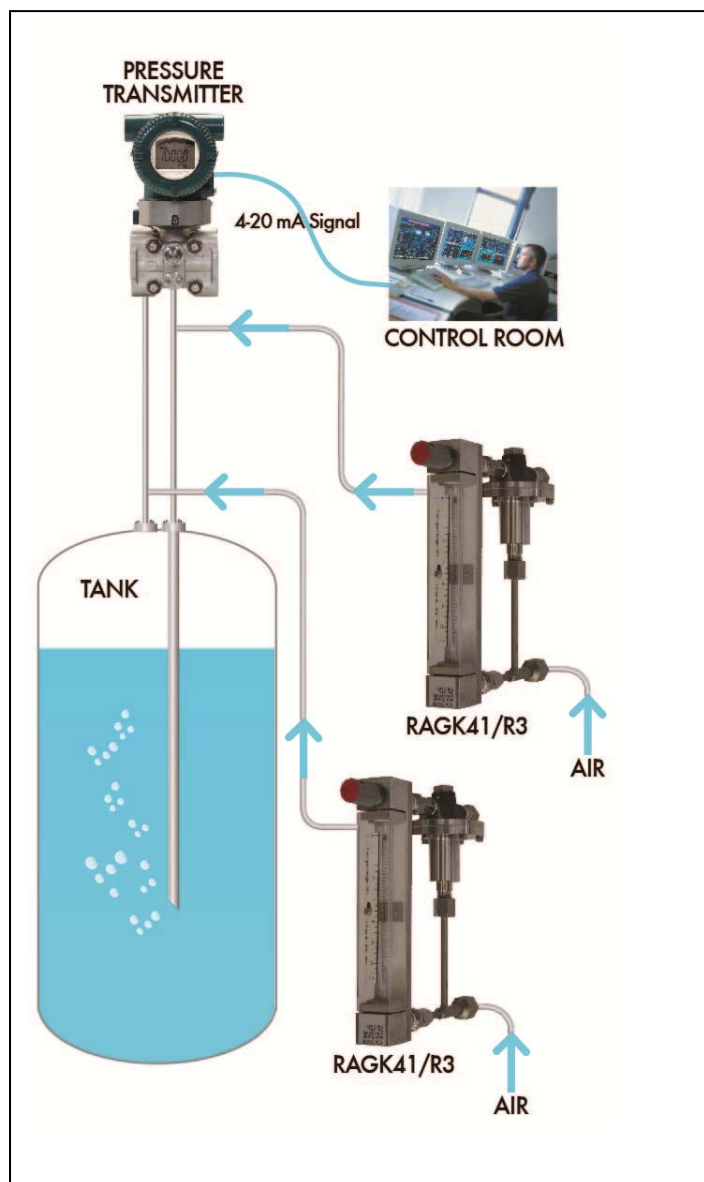
One of the most widely used methods of monitoring / controlling liquid level in a tank is the use of Bubble Tubes with Pressure or Differential Pressure Transmitters. A small but uninterrupted flow of air or inert gas is forced down through a dip tube which extends to near the bottom of the tank. The back pressure of the introduced gas is a function of the liquid level or head in the tank. The pressure transmitter takes the back pressure and converts it to an analog signal that is sent to the control room. The plant operator will then be able to monitor the exact level in the tank.

### 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 purge Rotameter and pressure 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

For most applications, the standard 2 SCFH air Rotameter range is suitable. We recommend you use the **RAGL41-T0PP-PPSAA-K633G-GLBGN/R3**. This meter has polypropylene connection material. If the customer requires stainless steel connection fittings then use **RAGL41-T0SS-SSSAA-K633G-GLBGN/R3**. For pressures over 250 PSI use model **RAKD41-T6SS-31NNN-T80NNN/R3**



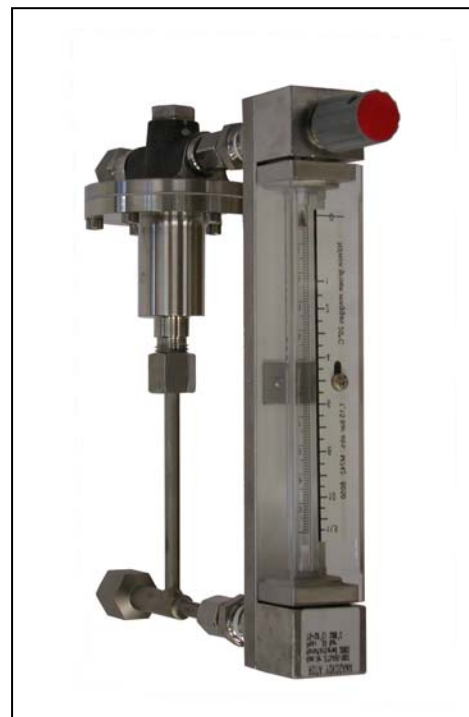
## Featured Products

### **RAGK/RAGL**

- Durable and reliable flowmeter
- Meter lengths 5 or 7.8 inches.
- Direct measurement and indication
- Suitable for Gases and Liquids
- Precise measurement at very low flow ranges
- Optional integrated flow control valve
- Process connections Stainless Steel or polypropylene
- Large selection range of floats
- Optional Limit switches available

### **CONTROLLER** **(Option /R1 & /R3)**

- **Max Liquid flow:** 110 l/h
- **Max Gas Flow:** 3000 l/h
- **Max Temp:** 80°C /176°F



### **RAKD**

- All wetted parts and indicator housing made of Stainless Steel
- Light, guided floats resulting in low pressure loss and stable float movement
- Easy to read display
- Available with a 4-20ma output and limit switches
- ATEX intrinsically Safe
- Available with adjustable needle valve
- Available with pressure controller
- Ideal for Purge meter applications
- Used extensively in corrosive tank level applications
- Temperature range -25°C to 250°C

