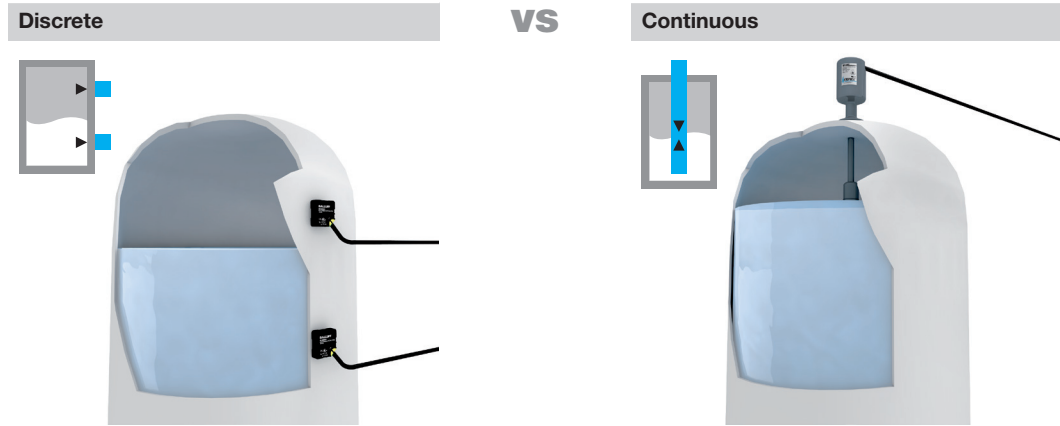




Level Sensing - Discrete vs. Continuous

Comparison of level detection and measurement sensing methods and technologies

Basic Overview



In some level sensing applications, it's only necessary to be able to detect the level of a tank or vessel at specific, individual locations, e.g., empty, ½ full, full. Sensors that perform this function are typically located outside the tank and detect the media (liquid or solid) inside the tank using capacitive, photoelectric, or ultrasonic technology.

In other level sensing applications, such as precision dispensing scenarios, it's necessary to know the precise amount of media inside the tank. In these applications, continuous level sensors are used. These types of sensors can be either inside or outside the tank, depending on the sensor technology. Sensors employing magnetostrictive, photoelectric, ultrasonic, and pressure can be used for continuous level measurement.

Strengths

- Lower cost
- Ease of implementation
- Typically doesn't contact media
- Ideal for corrosive/caustic media

- High precision
- Continuous, dynamic measurement
- Discrete setpoints can be programmed in host controller
- Analog signals provide error detection capability

Considerations

- Tank wall material has to be considered
- Mounting challenges
- Environmental conditions

- Typically higher cost
- Agitation of media can affect measurement
- Typically not suitable for dry or high-viscosity media

Common Applications

- Plastic Injection Molding: monitoring pellet hopper
- Food and Beverage: tank-level monitoring
- Pharmaceutical: pill level monitoring
- Semiconductor Manufacturing: chemical tank level monitoring

- Food and Beverage: dispensing and filling
- Fluid Power: Monitoring accumulator level
- Wastewater Treatment: tank-level monitoring
- General bulk tank level monitoring