

Radar Level Gauge Application Report 2

- Water Process -



Typical Fluid: Sodium Hypochlorite
 Aluminum Sulfate
 PAC (Poly-Aluminum Sulfate or chloride)

The MRG-10 micropower impulse radar level gauge features accurate, non-contact, level measurement with simple installation over a target fluid. In applications such as water process liquid tanks where the sensing elements of contact type level instruments are exposed to corrosion and substance adhesion, non-contact means of measurement which are unencumbered by such concerns are preferable for durability and reliability of measurement.

At this particular site, the MRG-10 radar gauge provides stable measurement of fluid level, unaffected by atmospheric.

Other popular measurement methods include differential pressure sensors that detect the pressure exerted by the liquid's mass. Pressure is then converted to level measurement in accordance with preset densities.

Capacitance type level gauges are also widely used in this application. This type of gauge detects electrical capacitance based on physical contact of the sensor (i.e. submerged length of probe) with the liquid to determine level.

These types of gauges are commonly applied in waterworks because of their relatively simple construction and design which involves direct sensor-liquid contact (wet installation). Costly materials are involved however if heavy corrosion resistance is required. In addition, high viscosity liquids such as slurries are prone to increased measurement errors.

Ultrasonic level gauges are also frequently employed as a non-contact means of level measurement. This type of gauge measures the round-trip transiting time of high frequency sounds to and from the surface of a liquid and converts this into distance. Ultrasonic level gauges however are easily affected by fog, vapor, pressure, temperature changes, and other environmental factors.

Radar level gauges, which incorporate electromagnetic waves (microwaves) on the other hand, do not require direct contact with liquids, density parameters or complex capacitance comparisons. Microwave-based level gauges are also least affected by ambient conditions.

In addition, the MRG-10 radar level gauge offers HART 2-wire loop communication protocol so customers can change any parameter from a central computer station with PC and configuration software. The MRG-10's 4-key input menu display also allows parameter setting on site as an alternate method.

	MRG-10	Pressure	Capacitance	Ultrasonic
Non- Contact	○	×	×	○
Vapor (High Temp & High Humidity)	○ Least affected	○ Not affected	×	×
Temp. Change	○ Least affected	○ Not affected	○ Not affected	×
Sediment	○ Not affected	×	○ Not affected	○ Not affected
Durability	○ Isolated from tank ATM.	×	×	×

[Application Data]

Typical User : Water works
 Target : Water process liquid

[Installation Data]

Main Unit : Radar Level Gauge MRG-10
 Antenna : Rod antenna (PFA)
 Range : 5m

For more detailed information, please contact your local representative.

Representative in your Area