

# Radar Level Gauge Application Report 11

## - Irrigation Water Monitoring -



The MRG-10 micropower impulse radar level gauge features accurate, non-contact, level measurement with simple installation over a target fluid, in this case, river waters.

At this particular site, the MRG-10 radar gauge provides stable level measurement of the river's water level, unaffected by atmospheric conditions like typhoon or fog.

Especially for typical application of irrigation site, water level must be monitored to prevent from flow-back at diversion gate or sluiceway. So high-accurate and stable level monitoring is suitable application for radar gauge.

Submerged pressure sensor systems are often used in these types of installations. The sensors detect the pressure exerted by the liquid's mass. Pressure is then converted to level measurement in accordance with preset densities.

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). There are disadvantages however with these types of gauges. For example, river bottom sediment may cause an increase in submerged pressure transducer 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 Transmitter	Ultrasonic
Non-Contact	○	×	○
Vapor (High Temp & High Humidity)	○ Least affected	○ Not affected	×
Temp. Change	○ Least affected	○ Not affected	×
Sediment	○ Not affected	×	○
Durability	○ Isolated from ambient conditions	×	×
		Wet	Exposed to ambient conditions

**[ Application Data ]**

Typical User : River monitor  
Target : River water

**[ Installation Data ]**

Main Unit : Radar Level Gauge MRG-10  
Antenna : 6 ~ 8 inch cone antenna  
Range : 2~5 m

For more detailed information, please contact your local representative.

**Representative in your Area**