Wireless Bottom-Mounted Ultrasonic Liquid Level Sensor

Wireless Sensor Network Based on LoRa Technology

R718PA22 Data Sheet

Wireless Bottom-Mounted Ultrasonic Liquid Level Sensor

Introduction

The R718PA22 is a wireless communication device that measures the liquid level with an ultrasonic liquid level sensor. You can install the ultrasonic liquid level sensor at the bottom and measure water, gasoline, and diesel in different sizes of containers made of metal, plastic, or glass. The data would be transmitted to other devices through the wireless network which complies with the LoraWAN™ wireless communication protocol standards.

Features

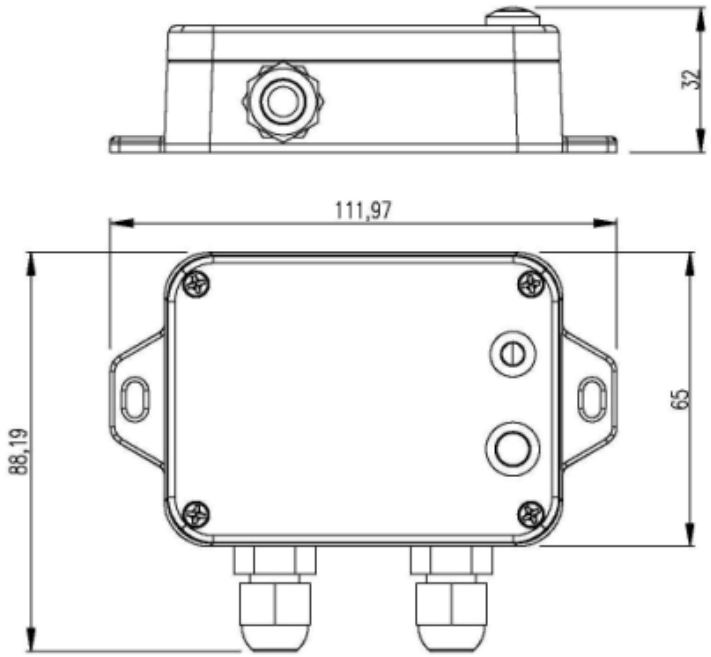
- SX1276 wireless communication module
- DC 12V adapter power supply
- Main body: IP65/IP67 (optional); ultrasonic probe: IP67
- Magnetic base (attached to a ferromagnetic material)
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum technology
- Configuration parameters can be configured through third-party software platforms
- Applicable to third-party platforms: Actility / ThingPark / TTN / MyDevices / Cayenne

Applications

- Fuel level measurement for tank truck
- Level measurement for storage tank, container, and LNG storage tank

Wireless Bottom-Mounted Ultrasonic Liquid Level Sensor

Dimensions



112mm (L) x 88.19mm (W) x 32mm (H)

Electrical Specifications

Power Supply	DC 12V
Working Current	<70mA (external sensor)

Note: The electrical specifications may vary due to the power supply voltage.

Ultrasonic Level Sensor

Measuring Range	80 to 2200mm (The values were measured at 1atm and normal temperature/humidity conditions with diesel in a 6mm aluminum tank.)
Blind Zone	≤ 80mm (The values were measured at 1atm and normal temperature/humidity conditions with diesel in a 6mm aluminum tank.)
Accuracy	±(5+S*0.5%)mm (The accuracy was tested by measuring diesel at 1atm and normal temperature/humidity conditions.)
Resolution	≤ 1mm
Tank Thickness	4 – 7mm

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Frequency

Frequency Range	863MHz–928MHz 470MHz–510MHz
TX Power	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm
Receiving Sensitivity	-136dBm (LoRa, Spreading Factor = 12, Bit Rate = 293bps) -121dBm (FSK, Frequency deviation = 5kHz, Bit Rate = 1.2kbps)
Antenna Type	Built-in antenna
Communication Distance	10 km Note: Communication distance may vary depending on the environment.
Data Transfer Rate	LoRa: 0.3kbps–50kbps; FSK: 1.2kbps–300kbps
Modulation	LoRa / FSK (Note: One modulation method is required.)
Supportable LoRaWAN band	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867, CN470-510 (Note: Configured before shipment)

Physical Properties

Dimensions	L: 112 mm x W: 88.19 mm x H: 32 mm
Ambient Temperature Range	-20°C to 55°C
Body Weight	About 200g
Ambient Humidity Range	<90% RH (no condensation)
Storage Temperature Range	-40°C to 80°C