

920 PulseWave – Non-contact liquid level radar sensor



PulseWave is a non-contact radar level sensor designed for monitoring of liquid levels in tanks. The radar system provides high precision and low power solution ensuring efficient and safe operations. PulseWave is installed directly on the top of the tank and provides wireless communication with Bluetooth 5.0 and a wired version with analog voltage signal.

The performance of the radar sensor is not affected by temperature, pressure or dust. With a measuring frequency of 60GHz, PulseWave ensures the accuracy of up to 1 cm for distance measurement of up to 3m. It's simple commissioning and trouble-free operation does not interfere the structure of the tank while embedded Bluetooth Low Energy module enables collection of tank level data.

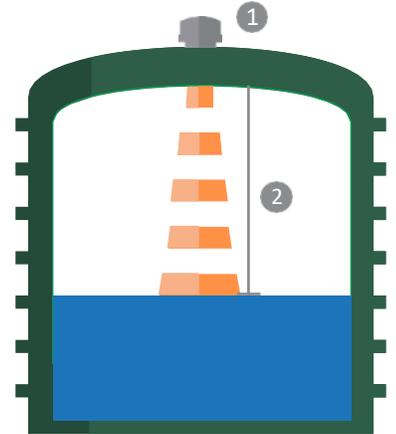


Smart Tank Monitoring - Non-contact radar level measurement

-  Bluetooth 5.0 connectivity
-  Monitoring of liquid levels in tanks
-  Bluetooth Low Energy (BLE)
-  Non-invasive installation on tanks
-  Robust design for outdoor operation
-  Certified to work in hazardous locations
-  Long life battery (up to 12 years)

Operating Principle

PulseWave is installed on the top of the tank (1) sends a pulse coherent radar signal towards the medium from above and receives the wave reflected off a liquid surface. Using the received microwave signals the sensor measures the distance between the transmitting antenna and the target surface (2). PulseWave supplies the head end system with the distance value that is converted and sent for further data presentation.



Technical Specification:

Data structures

- Current tank level and ambient temperature
- Battery status, device status
- Remote configuration and firmware upgrade

PulseWave versions

- PulseWave BLE Wireless (Battery powered)
- PulseWave Wired (external power from customer)
- Both options come with flat mounting or NPT mounting

Battery

- Non-replaceable
- Battery lifetime: up to 15 years

Mechanical

- Dimensions: H x W: 44 mm x 95 mm
- Mounting Adapters:
 - Solid base for connection with screws or adhesive glue (Through wall measurement)
 - 1"NPT adapter (metal tanks with bung)

Low Power Communication*

- Bluetooth 5.0
- 0.5V – 4.5V Wired output

HMI interface

- Digital Display readout of tank volume and battery level indicator
- Magnetic interface to trigger fast advertising

Environmental parameters

- Operating temperature: -40°C to +80°C. Recommended operating temperature: -25°C to +60°C
- Robust casing: IP 6K9K
- Casing material: PA (polyamide)
- UV resistant
- Certified for hazardous locations:
 - ATEX (zone 1): Ex II 1G Ex ia IIA T3 Ga
 - North American: Class 1, Division 1, Group D T3
 - UKCA 'Ex' (UKEX)
 - RoHs
 - Reach
 - Prop 65
- CE / UKCE
- FCC
- Fluid types: water, fuel, ...

Sensor and Measurement

- Measuring range up to 3 m
- Accuracy:
 - +/- 2cm or +/- 1% full scale (-25C to 85C)
 - +/- 5cm or +/- 2% full scale (-40C to -25C)
- Resolution: 2mm
- Plastic material (tank body) penetration: up to 37 mm tank wall thickness
- 60 GHz pulsed coherent radar (PCR), short-range device (SRD)
- Tilt Monitoring via internal accelerometer

