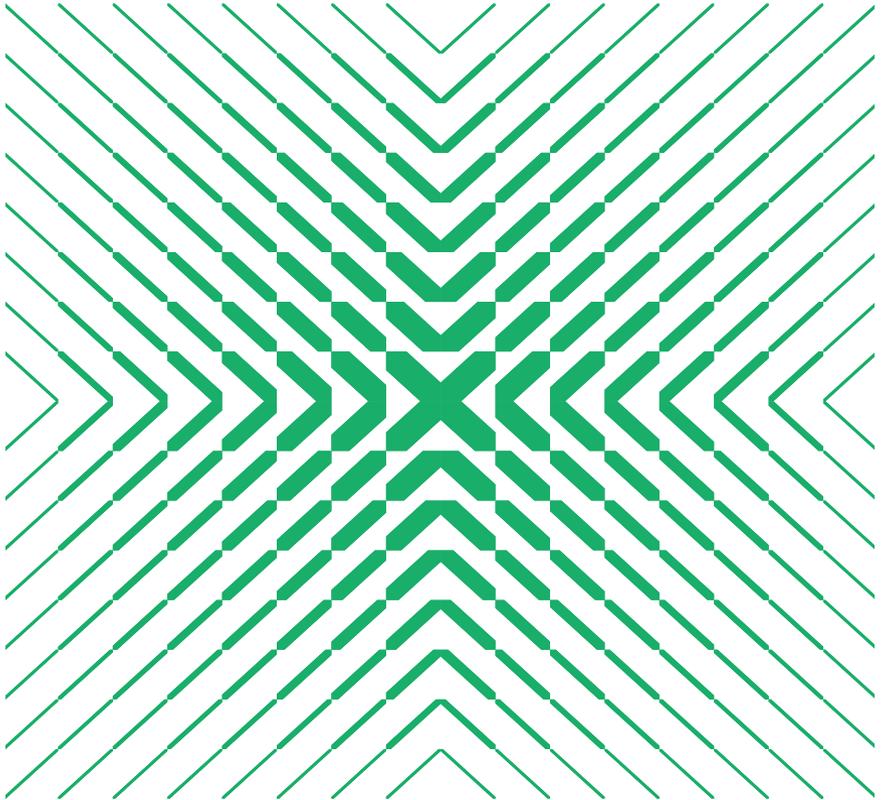




**Farmblox**



# Radar Tank Level Sensor

Product Manual ——— v1.0

# 1 Product Overview

Thank you for choosing the Farmblox Radar Tank Level Sensor.

This 80 GHz radar sensor delivers accurate, non-contact measurements in industrial and agricultural tanks. Designed for seamless integration with the Farmblox Universal Monitor, it reports readings to the cloud every 2.5 minutes and operates indefinitely when connected to a Universal Monitor.

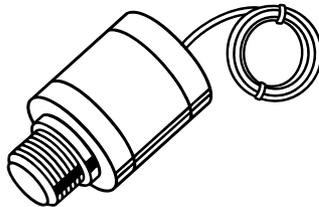
### Key Benefits:

- **Contact-free measurement:** PVDF-lens radar ignores vapors, temperature swings, and pressure changes
- **Built-in bubble level:** Ensures optimum accuracy and simplifies setup
- **Reads Through Plastic Tanks:** No need to drill a hole
- **Real-time cloud visibility** via Farmblox Universal Monitor and mobile app

# 2 Package Contents



Radar Tank Level Sensor x1



Mounting Bracket x1



Alcohol Pads x2

# 3 Technical Specifications

The sensor emits short 80 GHz microwave pulses toward the liquid surface, receives the echoes, and calculates the distance from the amount of time between sending and receiving the signal. Because the beam is narrow and focused, nearby structures rarely interfere.

Parameter	Specification
Field of View	8 degrees
Update Interval	2.5 minutes
Thread Type	1.5" NPT male
Lens Material	PVDF
Range	8in to 30ft (20cm to 10m)
Deadzone	8 in (200mm)
Operating Temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Power	Battery with solar recharge (via Universal Monitor)

## 4 Installation Procedure

### Precaution

Please read all instructions before installing the Radar Tank Level Sensor. **This device is not intrinsically safe; do not install it in tanks containing flammable or hazardous media. Confirm chemical compatibility with the PVDF lens and ensure the installation environment matches the sensor specifications.**

## Installation

### Important Installation Notes:

- Maintain at least 8" (200 mm) clearance between sensor and maximum liquid level. This is the minimum that the sensor will report.
- Avoid mounting near tank walls, agitators, inlets, or other obstructions that can cause false echoes.
- Ensure the Universal Monitor's solar panel stays clean and unshaded.

## Preparation

Verify that your installation meets the following:

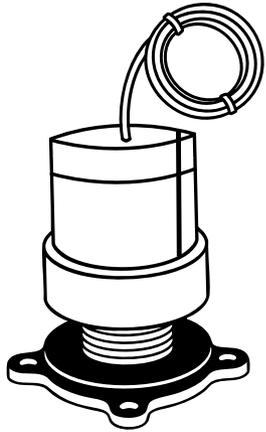
- Tank has a clear, unobstructed opening or flat spot at the top
- Minimum vertical clearance: 8 in (200 mm) between sensor face and maximum liquid level.
- Sensor will be mounted level; check with built-in bubble level.
- For bracket installs, mounting surface is flat, rigid, and clean.
- Universal Monitor can be mounted within cable reach and exposed to direct sunlight.

## 1.5" NPT Threaded Mounting

1. Seal Threads
2. Wrap the sensor's 1.5" NPT threads with PTFE tape or apply a compatible thread sealant.
3. Thread Sensor
4. Start the sensor by hand to avoid cross-threading, then tighten until snug.
5. Level Sensor
6. Use the integrated bubble level; adjust until centered.

**Caution:** Do not overtighten—PVDF threads can strip.

## Bracket Mounting (Included Adhesive Mounting)



### 1. Dry-Fit & Mark

Thread the sensor into the bracket, hold at the intended position, and confirm the bubble level is centered.

### 2. Clean Surface

Wipe mounting surface with the supplied alcohol pad; let dry.

### 3. Apply Bracket

Remove red liner from the adhesive and press the bracket gently into place as a test fit.

### 4. Verify Level

Check bubble level again; adjust if necessary.

*Optional:* Secure with screws through the bracket holes.

### 5. Remove Sensor

Unthread the sensor, firmly press the bracket for 30 s to fully bond, then reinstall the sensor and re-check level.

## Monitor Mounting & Connection

### 1. Mount Monitor

Mount the Universal Monitor where its solar panel has unobstructed sunlight along the daily path of the sun.

### 2. Align Connector

Match the white dots on the sensor and Monitor connectors; hand-tighten for a watertight seal.

**Caution:** Do not overtighten the coupling.

### 3. Secure Cable

Route and tie the cable to prevent strain.

## 5 Configuration

Use the Farmblox app to add the sensor:

1. Follow the steps in the Universal Monitor product manual to add the device.
2. Enter Distance to Empty, Distance to Full, and Tank Capacity when prompted.
3. Wait for the first reading (within 2.5 minutes) to confirm successful setup.

## 6 Operating & Testing

- Normal readings post to the cloud every 2.5 min when within Base Station range.
- For an on-demand reading, press the READ button on the Monitor; value appears in the app momentarily.
- After installation, compare the reported level to a manual measurement to verify accuracy.
- Re-check the bubble level periodically; re-level if displaced.

## 7 Maintenance & Troubleshooting

### Periodic Checks

- Verify bubble level remains centered.
- Keep the Monitor's solar panel free of dust, snow, or debris.

### Troubleshooting Guide

Parameter	Specification
No readings in app	Check connector seating and Monitor power; ensure solar panel is free of debris and clean.
Erratic or inaccurate level	Confirm sensor is level; ensure minimum clearance and no obstructions.
"Sensor Offline" alert	Verify cable integrity; inspect for damage; re-seat connector.
Physical damage	Replace sensor if PVDF threads are stripped or lens is cracked.



Need some help?

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