



LORAWAN MICROWAVE RADAR DISTANCE SENSOR

MRD-03 / MRD-12 / MRD-25 SERIES | LORAWAN V1.0.3 | CLASS A
| 80 GHZ RADAR



KEY FEATURES

- ◆ **80 GHz Precision Radar:** Non-contact microwave radar technology reliably measures distance through condensation, dust, moisture, and harsh environments where ultrasonic or lidar sensors fail.
- ◆ **Scalable Range Options:** Available in 3 m (9.8 ft), 12 m (39.4 ft), and 25 m (82 ft) models (MRD-03, MRD-12, MRD-25) with ± 20 mm accuracy and 1 mm resolution to match any application distance requirement.
- ◆ **Multi-Connectivity & Power Flexibility:** Ships in LoRaWAN, NB-IoT, and LTE-M variants with battery options from 1,000 mAh rechargeable to 19,000 mAh high-capacity, including solar-powered models for maintenance-free operation.

DEVICE OVERVIEW

The ioX-Connect MRD-Series Microwave Radar Distance Sensor is a high-precision, non-contact distance measurement device engineered for industrial and environmental monitoring. Using 80 GHz microwave radar technology, it delivers accurate distance readings even through condensation, heavy moisture, dust, and solid obstructions like wood or plastic, conditions that render ultrasonic and lidar sensors unreliable.

The series spans three range models - MRD-03 (3 m / 9.8 ft), MRD-12 (12 m / 39.4 ft), and MRD-25 (25 m / 82.0 ft), each supporting LoRaWAN, NB-IoT, LTE-M, and LTE CAT-1 connectivity. Multiple enclosure types accommodate battery capacities from 1,000 mAh rechargeable Li-ion to 19,000 mAh non-rechargeable, plus solar-powered variants for extended unattended operation. BLE-based configuration and wireless OTA firmware updates simplify commissioning and ongoing maintenance across remote sites.

Fully compatible with the ioX-Connect platform, the MRD-Series is ideal for deployments requiring reliable, long-range distance sensing in challenging field conditions, from water level monitoring and sewer management to smart agriculture, parking systems, and industrial process control.

Best For: Water level monitoring, sewer distance detection, smart agriculture, parking management, industrial liquid level measurement, obstacle avoidance, and trash can fill-level sensing

TECHNICAL FEATURES

- **Protocol:** LoRaWAN 1.0.3, Class A (OTAA / ABP) | Frequency Bands: EU433, KR920, US915, EU868, AS923, AU915
- **Radar Technology:** 80 GHz Microwave Radar, 7.6° beam angle (H & V)
- **Measurement Range:** MRD-03: 200–3,000 mm (7.9 in–9.8 ft) | MRD-12: 200–12,000 mm (7.9 in–39.4 ft) | MRD-25: 200–25,000 mm (7.9 in–82.0 ft) | **Accuracy:** ± 20 mm (± 0.79 in) | Resolution: 1 mm (0.04 in)
- **Battery Options:** 8,500 mAh / 19,000 mAh (non-rechargeable) | 3,000 mAh + 0.9 W solar | 1,000 mAh rechargeable
- **Cellular:** NB-IoT, LTE-M, LTE CAT-1 variants available
- Devices are **pre-provisioned** in ioX-Connect platform for quick and easy deployment



sales@iox-connect.com



+1(321) 441-9641



www.iox-connect.com