



# EM500 series

## Environment Monitoring Sensors



### ► Introduction

The EM500 series is LoRaWAN sensors designed for different professional applications. These sensors utilize a high ingress protection rating enclosure for use in the most challenging outdoor environmental conditions, and are powered by built-in battery for years of use.

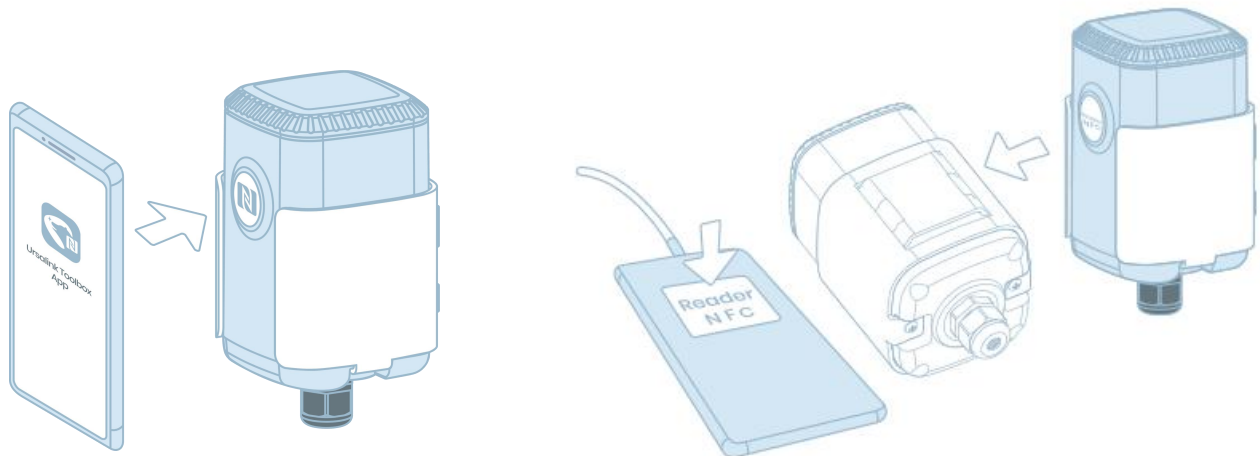
## ► Features

- Robust LoRa Connectivity for professional applications
- Easy Configuration via NFC
- IP66 rating waterproof
- LoRaWAN v1.0/v1.0.2
- Ursalink Cloud compliant
- 19000mAh Replaceable Battery

## ► Application Example



## ► Configuration via NFC



Mode 1: Mobile APP Configuration

Mode 2: Computer Configuration

## ► Hardware Specifications

### ➤ EM500-UDL Ultrasonic Distance/Level Sensor



#### Application

- ✓ Water level monitoring in running water
- ✓ Flood Monitoring
- ✓ Level/depth monitoring in water/oil tanks
- ✓ Waste water management
- ✓ Smart agriculture: fill level monitoring in grain, fertilizer or pellets silos
- ✓ Irrigation pond monitoring

#### LoRaWAN

Frequency	EU433/CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923
Tx Power	20dBm
Sensitivity	-147dBm @300bps
Mode	OTAA/ABP Class A

#### Distance Measurement

Range	EM500-UDL-W050:0.3-5m EM500-UDL-W100:0.5-10m (Customizable for snow level detection)
Resolution	1 mm
Accuracy	±1%

#### Physical Characteristics

Power Supply	19000 mAh Li-SOCL <sub>2</sub> battery
Operating Temperature	-20°C to +70°C
Ingress Protection	IP66
Dimension	156.1 × 71 × 69.5 mm
Mounting	Pole, wall, DIN rail

## ➤ EM500-PT100 Sensor



### Application

- ✓ Liquid or air temperature monitoring
- ✓ Industrial machine temperature monitoring
- ✓ Oven and cooking device monitoring
- ✓ Chimney and boiler temperature monitoring

### LoRaWAN

Frequency	EU433/CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923
Tx Power	20dBm
Sensitivity	-147dBm @300bps
Mode	OTAA/ABP Class A

### Temperature Measurement

Range	EM500-PT100-T050: -200 °C to +50 °C EM500-PT100-T200: -50 °C to +200 °C EM500-PT100-T500: -50 °C to +500 °C EM500-PT100-T800: -50 °C to +800 °C (Customizable from -200 °C to +800 °C)
Accuracy	±0.5°C

### Physical Characteristics

Probe Length	1.5m (Customizable)
Probe Type	Straight tube (Bolt-on ring, magnet and other types customizable)
Power Supply	19000 mAh Li-SOCL <sub>2</sub> battery
Operating Temperature	-20°C to +70°C
Ingress Protection	IP66
Dimension	105.4 × 71 × 69.5 mm (Waterproof connector and sensor are not included)
Mounting	Pole, wall, DIN rail

## ➤ EM500-SMT Soil Sensor



### Application

- ✓ Agriculture
- ✓ Horticulture
- ✓ Golf courses

### LoRaWAN

Frequency	EU433/CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923
Tx Power	20dBm
Sensitivity	-147dBm @300bps
Mode	OTAA/ABP Class A

### Measurement

#### Moisture

Range	0% to 100%
Accuracy	±2%

### Physical Characteristics

Probe Length	3m
Power Supply	19000 mAh Li-SOCL <sub>2</sub> battery
Operating Temperature	-20°C to +70°C
Ingress Protection	IP66
Dimension	105.4 × 71 × 69.5 mm (Waterproof connector and sensor are not included)
Mounting	Pole, wall, DIN rail

## ➤ EM500-SWL Submersible Water Level Sensor



### Application

- ✓ Groundwater level monitoring
- ✓ Level/depth monitoring in tanks or wells
- ✓ Depth/level monitoring in open or running water

### LoRaWAN

Frequency	EU433/CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923
Tx Power	20dBm
Sensitivity	-147dBm @300bps
Mode	OTAA/ABP Class A

### Measurement

Range	EM500-SWL-L003: 3m (H <sub>2</sub> O) EM500-SWL-L005: 5m (H <sub>2</sub> O) EM500-SWL-L010: 10m (H <sub>2</sub> O) (Customizable up to 200m and for other liquids)
Accuracy	±0.5% FS

### Physical Characteristics

Probe Length	At least should be 1-1.5m longer than measuring range
Power Supply	19000 mAh Li-SOCL <sub>2</sub> battery
Operating Temperature	-20°C to +70°C
Ingress Protection	IP66
Dimension	105.4 × 71 × 69.5 mm (Waterproof connector and sensor are not included)
Mounting	Pole, wall, DIN rail