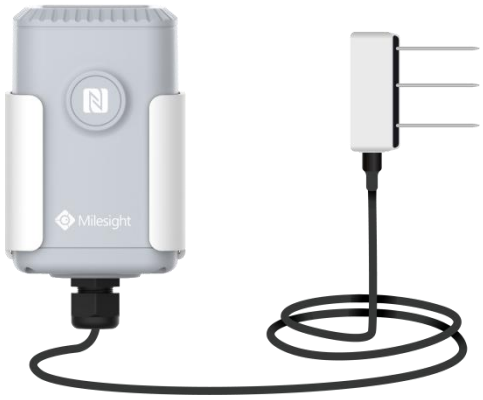
Soil Conductivity Sensor

Featuring LoRaWAN®

EM500-SMTC



EM500-SMTC is designed for measuring soil moisture, temperature and electrical conductivity in harsh environments and transmitting data using LoRaWAN® technology. With this low power consumption technology, EM500-SMTC can work up to 10 years with 19000 mAh battery. Combining with Milesight LoRaWAN® gateway and Milesight IoT Cloud solution, users can manage all sensor data remotely and visually.

EM500-SMTC is widely used for outdoor applications like smart agriculture, smart horticulture, etc.

◆ Features

- High precision for multiple kinds of soil
- Corrosion resistance and tough probe
- Ultra-wide-distance transmission up to line of sight of 10km
- IP66 waterproof enclosure for harsh environment applications
- Built-in 19000 mAh replaceable battery and work for 10 years without replacement
- Equipped with NFC for easy configuration
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with Milesight IoT Cloud solution

◆ Applications

- Irrigation Control
- Greenhouse control
- Smart agriculture
- Smart horticulture
- Golf course maintenance

◆ Specifications

Wireless Transmission	
Technology	LoRaWAN®
Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923
Tx Power	16dBm(868)/20dBm(915)/19dBm(470)
Sensitivity	-137dBm @300bps
Mode	OTAA/ABP Class A
Measurement	
Moisture	
Range	0% ~ 100% RH
Accuracy	±2%(0~50%), ±3%(50%~100%)
Resolution	0.01%
Temperature	
Range	-40°C ~ 80°C
Accuracy	±0.5°C
Resolution	0.1°C
Conductivity	
Range	0~20000 μs/cm
Accuracy	±3%(0~10000 μs/cm), ±5%(10000~20000 μs/cm)
Resolution	1 μs/cm
Operation	
Power On & Off	NFC, Power Button (Internal)
Configuration	Mobile App(via NFC) or PC Software(via USB Type-C)
Physical Characteristics	
Cable Length	2 m
Power Supply	19000 mAh Li-SOCL$_2$ battery (ER34615)
Battery Life*	5 years (10 min interval, SF12 for EU868) >10 years (10 min interval, SF7 for EU868)
Operating Temperature	-30°C to +70°C
Relative Humidity	0% to 100% (non-condensing)
Ingress Protection	IP67 (Transceiver)/IP68(Soil Sensor)
Dimension	Transceiver: 105.4 × 71 × 69.5 mm (4.1 × 2.8 × 2.7 in) Soil Sensor: 88 × 68 × 26 mm (3.5 × 2.7 × 1.0 in) (Probe length: 50mm/1.97 in)

Installation	Pole, wall or DIN Rail Mounting

* Tested under laboratory conditions and for guideline purposes only.