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 Development Platform, users can manage all sensor data remotely.

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
- IP67 waterproof enclosure for harsh environment applications
- Built-in 19000 mAh replaceable battery and work for 10 years without replacement
- Store historical records locally and support retransmission
- Equipped with NFC for easy configuration
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with Milesight IoT Cloud and Milesight Development Platform solution

◆ Applications

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

◆ Specifications

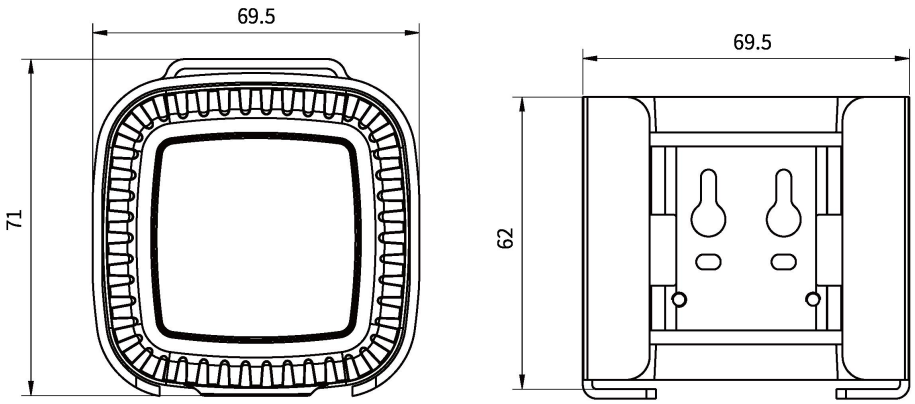
Wireless Transmission	
Technology	LoRaWAN®, Milesight D2D
Antenna	Internal Antenna
Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
Tx Power	16dBm(868MHz)/20dBm(915MHz)/19dBm(470MHz)
Sensitivity	-137dBm @300bps
Mode	OTAA/ABP Class A
Measurement	
Moisture	
Range	0% ~ 100%
Accuracy	±2%(0~50%), ±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	10μs/cm (0~10000 μs/cm), 50μs/cm (10000~20000 μs/cm)
Others	
LED	1 × LED Indicator (Internal)
Button	1 × Power/Reset Button (Internal)
USB	1 × USB Type-C(Internal) for Configuration and Console
Operation	
Power On & Off	NFC, Power Button (Internal)
Configuration	Mobile App(via NFC), PC Software(via USB Type-C), Downlink
Advanced Feature	Data Storage (1,000 entries), Data Retransmission, Data Retrievability, Threshold Alarm, Temperature Change Alarm, Milesight D2D Controller
Physical Characteristics	
Cable Length	2 m
Power Supply	1 × 19000 mAh ER34615 Li-$SOCl_2$ Battery

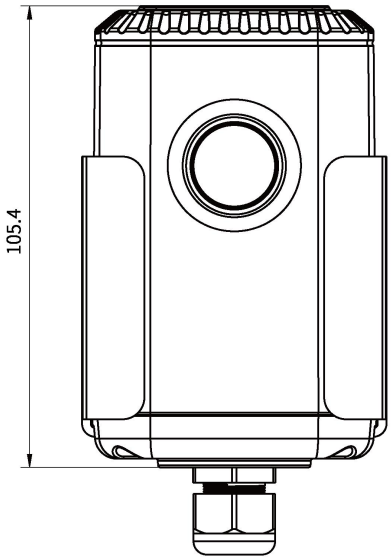
Battery Life* (10 min interval, 25 °C)	Up to 10 years (SF7&SF10, EU868) Up to 10 years (SF7, US915) Around 8 years (SF10, US915)
Operating Temperature	-30°C~70°C
Relative Humidity	0% to 100% (non-condensing)
Ingress Protection	Transceiver: IP67 Soil Sensor: IP68
Housing&Color	Transceiver: ABS + PC, Grey Soil Sensor: Epoxy Resin + Stainless Steel, White + Silver
Weight	Transceiver: 328g (With Battery and Mounting Bracket) Soil Sensor: 138g (With Cable)
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	Transceiver: Pole, Wall or DIN Rail Mounting Soil Sensor: Buried Installation
Approvals	
Regulatory	CE, FCC, ISED, ICASA, Telec
Environmental	RoHS

* Tested under laboratory conditions and for guideline purposes only.

◆ Dimensions(mm)

Transceiver:





Soil Sensor:

