

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
- IP67 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 and Milesight Development Platform 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/AS923-1&2&3&4 |
| Tx Power | 16dBm(868MHz)/20dBm(915MHz)/19dBm(470MHz) |
| Sensitivity | -137dBm @300bps |
| Mode | OTAA/ABP Class A |

Measurement

Moisture

| | |
|------------|---------------------------|
| Range | 0% RH~ 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 | 10µs/cm (0~10000 µs/cm), 50µs/cm (10000~20000 µs/cm) |

Operation

| | |
|------------------|---|
| Power On & Off | NFC, Power Button (Internal) |
| Configuration | Mobile App(via NFC) or PC Software(via USB Type-C) |
| Advanced Feature | Data Storage, Data Retransmission, Data Retrievalability, 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 years (10 min interval, 25 °C) |
| Operating Temperature | -30°C~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 |
| Approvals | |
| Regulatory | CE, FCC, ISED, ICASA, Telec |
| Environmental | RoHS |

* Tested under laboratory conditions and for guideline purposes only.

For more information, please contact us!

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