

# LoRaWAN Soil Moisture Sensor



Smart Agriculture, Smart Building, Smart City

SKU: WSLRW-SMT

## LoRaWAN SOIL MOISTURE SENSOR WSLRW-SMT

LoRaWAN



WSLRW-SMT-H1.PNG



WSLRW-SMT is LoRaWAN Soil Moisture Sensor, can be used to measure the Soil Moisture, Fertilizer and Soil Erosion, too. It is powered by 02 x AA-type batteries and can last up to 10 years. The Moisture sensor utilize the Frequency Domain measuring technique to deliver high accuracy and stable measurement of Soil moisture. The Moisture value is not affected by fertilizer content and temperature like other simple Capacitance Moisture Sensor on the market. The sensor will transmit data in kilometers distance to LoRaWAN gateway, any brand on the market. The typical applications are Smart farm, Smart Agriculture, Automatic Irrigation System, Soil Quality Measurement, Soil Erosion Monitoring...

### Applications

Flood Monitoring, Infrastructure Monitoring, Smart Irrigation

### Notes For Applications

- FDR sensors need to have good contact with the medium they measure with no air gaps;
- Water content in soil must be higher than 20% for proper measurement;
- Prevent direct sunlight on sensor housing for temperature not increase more than 50°C.



### LoRaWAN communication

LoRaWAN communication standard to allow sensor connect to any LoRaWAN Gateway on the market



### 10-Year battery

Ultra-low power sensing technology from Daviteq with Ultra-low power wireless technology allow the sensor can last up to 10 years with 02 x type AA batteries



### Pre-calibrated

Sensors are pre-calibrated at factory to deliver high accuracy and quick installation



### High Accuracy

Utilize advanced technology, Frequency Domain Reflectometry to deliver high accuracy and stable measurement of Soil Moisture, not affected by Fertilizer contents and Temperature like the simple Capacitance Moisture Sensor on the market

## SOIL MOISTURE SENSOR INSTALLATION



WSLRW-SMT-H2.PNG

## DAVITEQ TECHNOLOGIES INC

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Created date: Dec-21-2022

Updated date: Aug-28-2024

1/4

## Specification

Moisture & EC Sensors	Advanced technology - Frequency Domain Reflectometry with response time
Moisture range/ accuracy/ resolution	0~100%, acc ±3.0% , res 0.01%
Temperature range/ accuracy/ resolution	-30~70°C, acc ±0.3°C, res 0.1°C
EC range/ accuracy/ resolution	0~20mS/cm, acc ±2.0% span, res 0.1 mS/cm
N-P-K range/ accuracy/ resolution	0-1999mg/kg, acc ±2% span, res 1.0mg/kg
Measurement Volume	Dia. 70mm x Height 70mm
Wetted materials	316L SS & thermoplastic
Sensor Dimensions	71x45x16mm with probes 70mm and signal cable 2m, IP68 rating
Optional Soil Erosion Sensor	Clinometer type
Soil Erosion Probe	Dia. 10mm x Length 300mm with signal cable 2m, SS304 material
COMMUNICATION	
SF Factors	SF7~SF12
Antenna	Internal Antenna 2.0 dBi
Battery	02 x AA size 1.5VDC, battery not included
RF Frequency and Power	860~930MHz, 14~20dBm, configurable for zones: EU868, IN865, RU864, KR920, AS923, AU915, US915
Protocol	LoRaWAN
RF Module complies to	ETSI EN 300 220, EN 303 204 (Europe) FCC CFR47 Part15 (US), ARIB STD-T108 (Japan)
Vietnam Type Approval	
Working temperature	-40~60°C (with AA L91 Energizer®)
Dimensions/Netweight	H106xW73xD42, 190g (Wireless part only)
Housing	Aluminum + Polycarbonate plastic, IP67.

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2/4

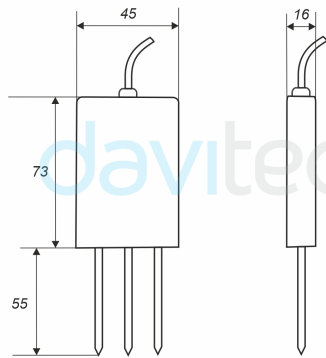
INSTALLATION FOR MULTI-LAYER MEASUREMENT



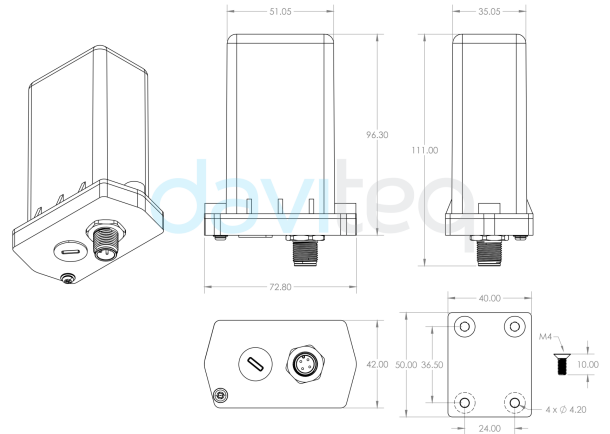
LoRaWAN NETWORK



DIMENSION DRAWINGS OF SENSOR (Unit: mm)



DIMENSION DRAWING OF WIRELESS SENSOR (Unit: mm)



RECOMMENDED BATTERIES

E91 AA Alkaline battery



-18 .. + 60 oC working temperature  
10-year shelf life  
3000 mAh Capacity  
Price: 1X

L91 AA Lithium battery



-40 .. + 60 oC working temperature  
20-year shelf life  
3500 mAh Capacity  
Price: 3.5X

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## Ordering Information

ITEM CODES	DESCRIPTIONS
WSLRW-SMT-01	LORAWAN SOIL MOISTURE AND TEMPERATURE SENSOR, PRE-CALIBARTED, AA 1.5VDC BATTERY, IP67/IP68, SENSOR CABLE 2M, 860-930MHZ
WSLRW-SMT-07	LORAWAN SOIL 7-IN-1 SENSOR, MOISTURE, TEMPERATURE, EC, SALINITY AND N/P/K, PRE-CALIBRATED, AA 1.5VDC BATTERY, IP67/IP68, SENSOR CABLE 2M, 860-930MHZ

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4/4