LoRaWAN Soil Moisture Sensor

Smart Agriculture, Smart Building, Smart City

SKU: WSLRW-SMT



WSLRW-SMT-H1.PNG

Safe Zone

Hazardous Zones

WSLRW-SMT is a LoRaWAN wireless sensor primarily designed for reliable soil moisture, temperature and electrical conductivity (EC) monitoring. It utilizes Frequency Domain Reflectometry (FDR) technology for stable soil moisture measurement, with reduced influence from fertilizer content and temperature compared with conventional capacitive sensors. The rugged IP68 probe integrates stainless-steel sensing electrodes and can also be immersed directly in water for EC and temperature measurement, extending its use to irrigation water, canals, rivers and other environmental monitoring applications. Factory calibration, ultra-low-power operation and LoRaWAN connectivity enable reliable long-term monitoring in remote agricultural and environmental applications.

Applications

Soil Moisture & EC Monitoring, Smart Irrigation, Precision Agriculture, Irrigation Water EC, River & Canal Monitoring

Notes For Applications

For accurate soil measurement, ensure good probe-to-soil contact without air gaps. Sufficient soil moisture is required for reliable EC measurement; soil water content above approximately 20% is recommended. For water EC and temperature monitoring, fully immerse the IP68 sensing probe while keeping the LoRaWAN transmitter above water.

Advanced FDR Soil Moisture

Advanced Frequency Domain Reflectometry provides stable soil moisture measurement with reduced influence from fertilizer content and temperature.

Soil & Water EC Measurement

Stainless-steel EC electrodes measure electrical conductivity in moist soil and can also be directly immersed in water for EC monitoring.

IP68 Multi-Parameter Probe

Rugged IP68 probe with 316L stainless-steel wetted parts for soil installation and water immersion applications.

Factory Calibrated

EC measurement can be calibrated and verified using standard conductivity solutions for reliable and consistent results.



WSLRW-SMT-H2.PNG

DAVITEQ TECHNOLOGIES INC

Ho Chi Minh City, VN | Koblenz, DE | Melbourne, AU | Zurich, CH

+84.28.6268.2523 / 6268.2524

info@daviteq.com **www.iot.daviteq.com**

Created date: Dec-21-2022 | Updated date: Nov-03-2026

Specification

Soil Moisture Measurement Principle	Frequency Domain Reflectometry (FDR)
EC Measurement Principle	Electrical conductivity measurement using stainless-steel electrodes
Measurement Media	Soil, water for EC and temperature measurement
Moisture range/ accuracy/ resolution	0～100%, acc ±3.0% , res 0.01%
Temperature range/ accuracy/ resolution	-30～70℃, acc ±0.3℃, res 0.1℃
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
Salinity range/ accuracy/ resolution	0-10.000 ppm, +/-3% Reading, Resolution: 1 ppm
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℃ (with AA L91 Energizer®)
Dimensions/Netweight	H106xW73xD42, 190g (Wireless part only)
Housing	Aluminum + Polycarbonate plastic, IP67.

INSTALLATION FOR MULTI-LAYER MEASUREMENT



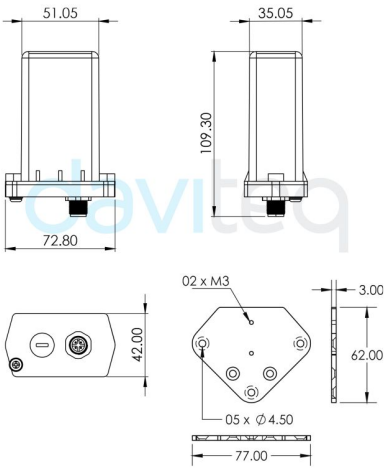
WSLRW-SMT-H3.PNG

LoRaWAN NETWORK



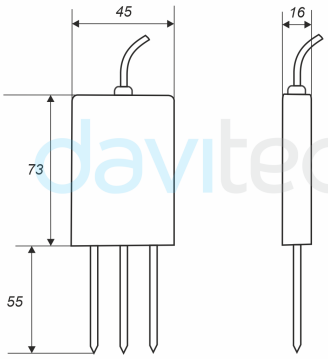
WSLRW-SMT-H4.PNG

DIMENSION DRAWING OF WIRELESS SENSOR
(Unit: mm)



WSSFC-SMT-H6.JPG

DIMENSION DRAWINGS OF SENSOR
(Unit: mm)



WSLRW-SMT-H5.PNG

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

WSLRW-SMT-H7.PNG

PRODUCT PACKAGE



WSLRW-SMT-H7.JPG

DAVITEQ TECHNOLOGIES INC
Ho Chi Minh City, VN | Koblenz, DE | Melbourne, AU | Zurich, CH
+84.28.6268.2523 / 6268.2524
info@daviteq.com **www.iot.daviteq.com**

Created date: Dec-21-2022 | Updated date: Nov-03-2026

Ordering Information

ITEM CODES	DESCRIPTIONS
WSLRW-SMT-02	LORAWAN SOIL EC, MOISTURE AND TEMPERATURE SENSOR, PRE-CALIBARTED, AA 1.5VDC BATTERY, IP67/IP68, SENSOR CABLE 2M, 860-930MHZ
WSLRW-SMT-06	LORAWAN SOIL 6-IN-1 SENSOR, MOISTURE, TEMPERATURE, EC, SALINITY AND N/P/K, PRE-CALIBRATED, AA 1.5VDC BATTERY, IP67/IP68, SENSOR CABLE 2M, 860-930MHZ