



## daviteq WSLRW-SMT-01 LoRaWAN Soil Moisture Sensor Instruction Manual

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**daviteq WSLRW-SMT-01 LoRaWAN Soil Moisture Sensor**



## Product Information

### LoRaWAN Soil Moisture Sensor

The LoRaWAN Soil Moisture Sensor is a highly advanced sensor that can measure the moisture content of soil, as well as other parameters such as temperature and EC. The sensor uses advanced technology, Frequency Domain Reflectometry, to deliver high accuracy and stable measurement of soil moisture, which is not affected by fertilizer contents and temperature like the simple Capacitance Moisture Sensor on the market. The sensor is pre-calibrated at the factory to deliver high accuracy and quick installation. It uses ultra-low power sensing technology from Daviteq with ultralow power wireless technology to last up to 10 years with 02 x type AA batteries.

### Sensors Specification

- Moisture range/accuracy/resolution: 0 .. 100 %, acc +/- 3.0%, res 0.01%
- EC range/accuracy/resolution: 0 .. 20 mS/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
- Diameter of measurement Volume: 70mm
- Wetted materials: 316L SS & thermoplastic
- Sensor Dimensions: 71x45x16mm with probes 70mm and signal cable 2m

### LoRaWAN Specification

- Data rate: 250bps .. 5470bps
- Antenna: External Antenna 0 dbi
- Battery: 02 x AA size 1.5VDC, battery not included
- RF Frequency and Power: 860..930Mhz, +14 .. +20 dBm, configurable for zones: EU868, IN865, RU864, KR920, AS923, AU915, US915
- Protocol: LoRaWAN
- RF Module complies with: ETSI EN 300 220, EN 303 204 (Europe) FCC CFR47 Part15 (US), ARIB STD-T108

(Japan)

- Vietnam Type Approval
- Working temperature: -40oC...+60oC (with AA L91 Energizer)
- Dimensions/Net weight: H106xW73xD42, 190 grams (Wireless part only)
- Housing: Aluminum + Polycarbonate plastic, IP67.

## Ordering Information

Item Codes	Descriptions
WSLRW-SMT-01	LORAWAN SOIL MOISTURE AND TEMPERATURE SENSOR, PRE-CALIBRATED, AA 1.5VDC BATTERY, IP67/IP68, SENSOR CABLE 2M, 860-930MHZ
WSLRW-SMT-02	LORAWAN SOIL MOISTURE, TEMPERATURE AND EC SENSOR, PRE-CALIBRATED, 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, PRECALIBRATED, AA 1.5VDC BATTERY, IP67/IP68, SENSOR CABLE 2M, 860-930MHZ

## Product Usage Instructions

To use the LoRaWAN Soil Moisture Sensor, follow these steps:

1. Install the sensor in the soil where you want to measure moisture content. The sensor is IP68 rated, so it can be buried in the soil for an extended period of time.
2. Connect the sensor to a LoRaWAN Gateway using an external antenna with 0 dbi.
3. Configure the RF frequency and power according to your region.
4. Insert two AA batteries into the sensor. The sensor uses ultra-low power sensing technology from Daviteq with ultralow power wireless technology to last up to 10 years with these batteries.
5. The sensor is pre-calibrated at the factory to deliver high accuracy and quick installation. You can start measuring the moisture content of the soil immediately after installation.

WSLRW-SMT is LoRaWAN Soil Moisture Sensor, can be used to measure 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 utilizes 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 the LoRaWAN gateway,any brand on the market. The typical applications are Smart farm, Smart Agriculture, Automatic Irrigation Systems, Soil Quality Measurement, Soil Erosion Monitoring...

## INSTRUCTION

### • 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 Ultralow 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

- **IP68**

Ingress Protection IP68 allow sensor can be buried in the soil in long time

## SOIL MOISTURE SENSOR INSTALLATION



## SPECIFICATION

### SENSORS 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 .. 20 mS/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
- Optional Soil Erosion Sensor Clinometer type
- Soil Erosion Probe Dia. 10mm x Length 300mm with signal cable 2m, SS304 material

### LoRaWAN SPECIFICATION :

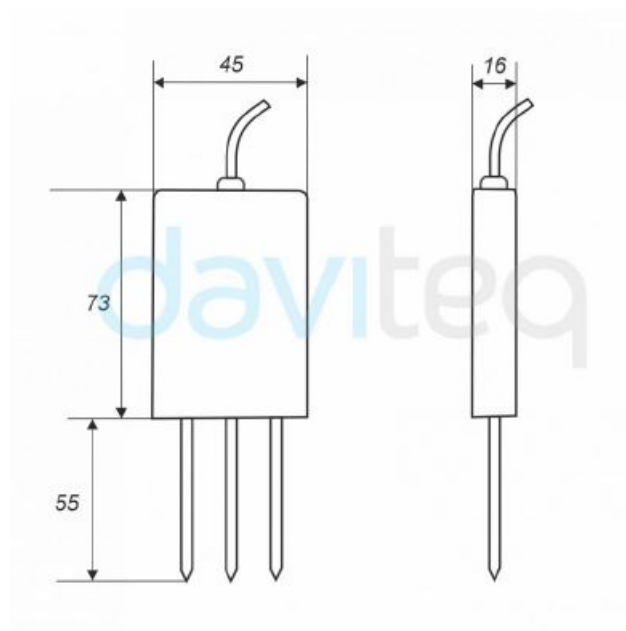
- **Data rate** 250bps .. 5470bps
- **Antenna** External Antenna 0 dbi
- **Battery** 02 x AA size 1.5VDC, battery not included
- **RF Frequency and Power** 860..930Mhz, +14 .. +20 dBm, configurable for zones: EU868, IN865, RU864, KR920, AS923, AU915,US915
- **Protocol** LoRaWAN
- **RF Module complies to** ETSI EN 300 220, EN 303 204 (Europe) FCC CFR47 Part15 (US), ARIB STD-T108 (Japan)

### Vietnam Type Approval

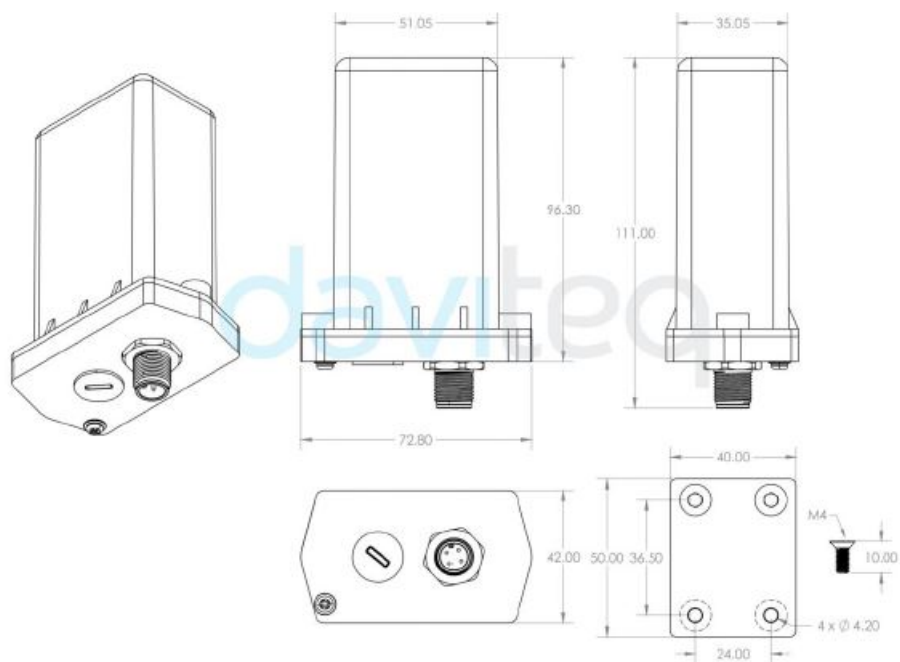
- **Working temperature** -40oC..+60oC (with AA L91 Energizer)
- **Dimensions/Netweight** H106xW73xD42, 190 grams (Wireless part only)
- **Housing** Aluminum + Polycarbonate plastic, IP67.



### DIMENSION DRAWINGS OF SENSOR (Unit: mm)



**DIMENSION DRAWING OF WIRELESS SENSOR**  
(Unit: mm)



## RECOMMENDED BATTERIES

E91 AA Alkaline battery

L91 AA Lithium battery



### **E91 AA Alkaline battery**

-18 °C, + 60 °C working temperature  
10-year shelf life  
3000 mAh Capacity  
Price: IX

### **L91 AA Lithium battery**

-40 °C, + 60 °C working temperature  
20-year shelf life  
3500 mAh Capacity  
Price: 3.5X

## **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-02** LORAWAN SOIL MOISTURE, TEMPERATURE AND EC 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, PRECALIBRATED, AA 1.5VDC BATTERY, IP67/IP68, SENSOR CABLE 2M, 860-930MHZ


### **DAVITEQ TECHNOLOGIES INC**

No.11 Street 2G, Nam Hung Vuong Res., An Lac Ward, Binh Tan Dist., Ho Chi Minh City, Vietnam  
+84.28.6268.2523 / 6268.2524  
[info@daviteq.com](mailto:info@daviteq.com)


[www.daviteq.com](http://www.daviteq.com)

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## **Documents / Resources**

	<p><b><a href="#">daviteq WSLRW-SMT-01 LoRaWAN Soil Moisture Sensor</a></b> [pdf] Instruction Manual          WSLRW-SMT-01 LoRaWAN Soil Moisture Sensor, WSLRW-SMT-01, LoRaWAN Soil Moisture Sensor, Soil Moisture Sensor, Moisture Sensor</p>
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References

-  [Daviteq – Nhà sản xuất cảm biến đo lường và hệ thống IoT](#)
-  [TCPDF](#)