

# Sigfox Soil Moisture Sensor



Smart Agriculture, Smart Building, Smart City

SKU: WSSFC-SMT

## SIGFOX SENSOR - SOIL MOISTURE & NPK WSSFC-SMT



sigfox



WSSFC-SMT-H1.PNG



Safe Zone

Hazardous Zones

WSSFC-SMT is the modular design Sigfox-ready sensor, based on 10-year experience in design and manufacturing Industrial sensor of Daviteq Company, can be used to measure the Soil Moisture, Fertilizer (NPK) and Soil Erosion, too. With Ultra-low power design and smart firmware allow the complete Wireless and Sensor package run on a battery AA type up to 10 years. The Moisture sensor utilises 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 kilo-meters distance to Sigfox base station. The typical applications are Smart Agriculture, Automatic Irrigation System, Soil Quality Measurement, Soil Erosion Monitoring... WSSFC-SMT can support all regions of Sigfox network in over the World, RC1, RC2, RC3, RC4, RC5, RC6, RC7.

### 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.

**Sigfox Ready**  
Device are best operating performance on the SIGFOX network

**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 AA batteries

**Pre-calibrated**  
Sensors are pre-calibrated at factory for quick installation

**High Accuracy & Stable**  
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 marker

## SOIL MOISTURE SENSOR INSTALLATION



WSSFC-SMT-H2.PNG

Soil Moisture Sensor

## DAVITEQ TECHNOLOGIES INC

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Created date: Dec-21-2022


Updated date: Aug-28-2024


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## Specification

Moisture, EC & NPK Sensors	Advanced technology - Frequency Domain Reflectometry, Pre-calibrated at factory
Moisture range/ accuracy/ resolution	0~100%, acc $\pm 3.0\%$ , res 0.01%
Temperature range/ accuracy/ resolution	-30~70°C, acc $\pm 0.3^\circ\text{C}$ , res 0.1°C
EC range/ accuracy/ resolution	0~20 mS/cm, acc $\pm 2.0\%$ span, res 0.1 mS/cm
NPK Measuring range	0~1999mg/kg
NPK Measurement accuracy & Resolution	Acc $\pm 2\%$ FS, res 1mg/kg (mg/L)
Response Time	< 1s
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, $\pm 90^\circ$ of XYZ, 0.03o resolution, 1Hz max sampling rate
Soil Erosion Probe	Dia. 10mm x Length 300mm with signal cable 2m, SS304 material
COMMUNICATION	
Sigfox zones	RC1-RC7
Antenna	Internal Antenna 2.0 dbi
Battery	02 x AA Type 1.5VDC, working time up to 10 years (depends on configuration)
RF Module complies to	CE, FCC, ARIB
Working temperature	-40~60°C (with AA L91 Energizer®)
Dimensions	H106xW73xD42 (Wireless part only)
Netweight	190g (Wireless part only)
Housing	Aluminum + Polycarbonate plastic, IP67.

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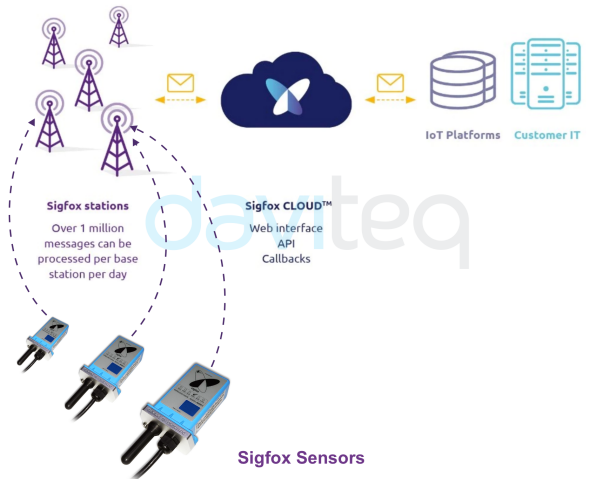
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SOIL MOISTURE & SOIL EROSION SENSOR INSTALLATION



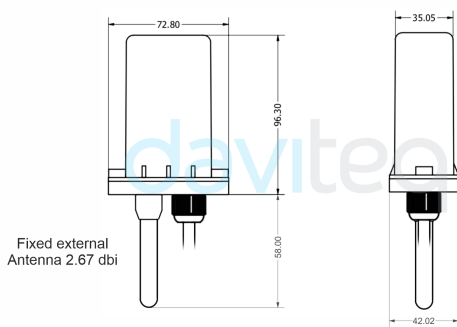
WSSFC-SMT-H3.PNG

SYSTEM ARCHITECTURE



WSSFC-SMT-H4.PNG

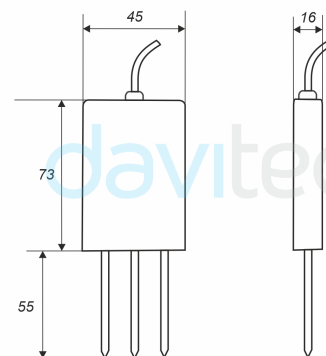
DIMENSION DRAWING OF WIRELESS TRANSMITTER



WSSFC-SMT-H5.PNG

UNIT: mm

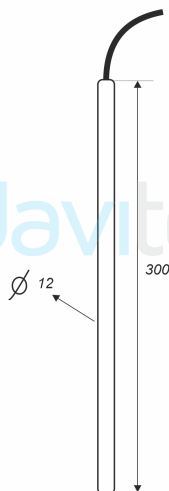
DIMENSION DRAWING OF SOIL MOISTURE SENSOR



WSSFC-SMT-H6.PNG

UNIT: mm

DIMENSION DRAWING OF INCLINOMETER SENSOR



WSSFC-SMT-H7.PNG

UNIT: mm

RECOMMENDED BATTERIES FOR SIGFOX SENSOR

E91 AA Alkaline battery

L91 AA Lithium battery



-18 .. + 60 oC working temperature

-40 .. + 60 oC working temperature

10-year shelf life

20-year shelf life

3000 mAh Capacity

3500 mAh Capacity

Price: 1X

Price: 3.5X

WSSFC-SMT-H8.PNG

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## Ordering Information

ITEM CODES	DESCRIPTIONS
WSSFC-SMT-01	SIGFOX-READY SOIL MOISTURE AND TEMPERATURE SENSOR, PRE-CALIBARTED, AA 1.5VDC BATTERY, IP67/IP68, SENSOR CABLE 2M, 860-930MHZ
WSSFC-SMT-07	SIGFOX-READY 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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