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INDUSTRIAL PRODUCT DATASHEET

SenseCAP Wireless Soil Temperature, VWC & EC Sensor - LoRaWAN EU868 - MT20

The SenseCAP Wireless Soil Temperature, VWC & EC Sensor (LoRaWAN EU868) is an industrial-grade, IP66-rated 3-in-1 sensor ideal for water-saving irrigation, precision agriculture, greenhouses, and other horticultural uses, with LoRaWA...

SKU	UPDATED	PRICE
101990796	2026-01-05 07:18:19	$259.00(Excl. VAT)



Overview



The SenseCAP Wireless Soil Temperature, VWC & EC Sensor is a 3-in-1 high-performance sensor delivering accurate soil moisture, temperature, and electrical conductivity data with exceptional reliability and stability. It features LoRaWAN EU868 connectivity, IP66-rated industrial-grade robustness, anti-corrosion durability, and ultra-wide-distance transmission up to 10 km, with a battery life of at least 6 years.

Key Features

- High Performance: high accuracy, reliability, and stability
- Enables Data Transmission with LoRaWAN
- Compact Design: 3-in-1, soil moisture, temperature, and EC sensor
- Industrial-grade Robustness: IP66 rated, suitable for long-term applications.
- Strong Anti-interference: made of flame-retardant epoxy resin.
- High Durability: anti-corrosion, with excellent performance for long-term use
- IP66 Certified
- User-friendly: easy to use, install and integrate
- Support LoRaWAN protocol Class A
- High reliability and stability
- Ultra-wide-distance transmission: 10km in the line-of-sight scenes, 2 km in urban scenes
- Battery life ≥ 6 years

Product Gallery

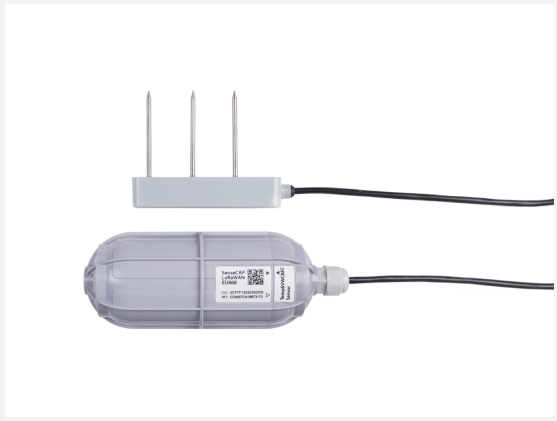












Specification

Soil Temperature	
Range	-40 ℃ to +80 ℃
Accuracy	±0.5 ℃

Resolution	0.1 ℃
VWC	
Range	From completely dry to fully saturated (from 0% to 100% of saturation)
Accuracy	±3% (0 to 51 %); ±5% (50 to 100 %)
Resolution	0.1 %(0 to 50%); 0.3%(51 to 100%)
Soil Salinity	
Range	0 to 23000uS/cm
Accuracy	±5% from 0~7000uS/cm ±15% from 7000~23000uS/cm
Resolution	10uS/cm(0~7000uS/cm) 50uS/cm(7000~230000uS/cm)
General Parameters	
Product Model	LoRa-S-EU868-Soil Temp&VWC&EC-01
Microcontroller	Ultra-low-power MCU
Support Protocol	Based on LoRaWAN v1.0.2 protocol
LoRa Channel Plan	EU868
LoRa Power Output	16 dBm (EIRP)
Sensitivity	-137.5dBm(SF12, BW125KHz)
Current Consumption	5 μA (sleep mode) 120 mA max(active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Measuring Area	A cylinder area (with the probe as the center, diameter: 7cm, height: 7cm)
IP Rating	IP66
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1
Enclosure Material	PC
Operating Temperature	-40 ℃ to +60 ℃
Operating Humidity	0 to 100%RH (non-condensing)
Device Weight	385g
Certification	RoHS
Battery (Contained in equipment)	
Battery Life	≥ 3 years (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (non-rechargeable)

Applications

- water-saving irrigation
- gardening
- greenhouses
- outdoor farming
- horticulture
- golf turf management
- forestry
- precision agriculture

Part List

1	Sensor	1x
2	Bracket	1x
3	M4 Self-drilling Screw	4x
4	M3 Self-drilling Screw	2x

Q:	What exactly is soil moisture measured?
A:	Measured is soil volumetric water content, soil volumetric water content %= soil volumetric water content * bulk density
Q:	How is soil volume water content measured?
A:	By measuring the dielectric constant, and then through a certain calculation formula to convert into soil volume water content.
Q:	Why does the measured volume water content of soil not reach 100% in water?
A:	First of all, the saturated water content of the soil is about 60%, and the measurement of higher water content is not of practical significance. Second, we need to pay attention to the test environment and method when testing. 7*7*7cm square column range measured by the sensor probe. If water is used for the test, a container of at least 20*20*20cm is required, and the probe is placed in the middle (with water to immerse the probe). The resulting value will be between 80% and 100%.
Q:	How to install a soil sensor probe?
A:	Dig a vertical hole, insert the sensor steel needle into the hole to be measured, and then compacted the pit to ensure that the steel needle is in close contact with the soil. 
Q:	Is the conductivity affected by the soil moisture?
A:	The EC value can be continuously monitored in the field, mainly by measuring Bulk EC value, which is related to soil water content. If there is no water or little water content, the ions in the soil cannot dissolve in the water, and conductivity will be low.

Compliance & Logistics

HSCODE	9025800090
USHSCODE	9025801000
UPC	
EUHSCODE	9013101000
COO	CHINA

Resource Links

- https://www.seeedstudio.com/SenseCAP-Wireless-Soil-Temperature-VWC-EC-Sensor-LoRaWAN-EU868-MT20-p-4994.html
- LoRaWAN Gateway and Sensor Catalog

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