

INDUSTRIAL PRODUCT DATASHEET

RS485 Moisture & EC & Temperature sensor for Soil, Substrate, Rockwool, Cocopeat

IP68-rated RS485 sensor for precise soil, rockwool, and cocopeat moisture, EC, and temperature monitoring in agriculture and research.

SKU

101991241

UPDATED

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PRICE

\$149.00(Excl. VAT)



Overview



The RS485 Moisture & EC & Temperature sensor is designed for soil, rockwool, cocopeat, and substrate, providing high-precision measurements of moisture, electrical conductivity, and temperature with IP68-rated durability. It integrates seamlessly with SenseCAP S2100 LoRaWAN datalogger for efficient data collection in greenhouse, irrigation, and scientific research applications.

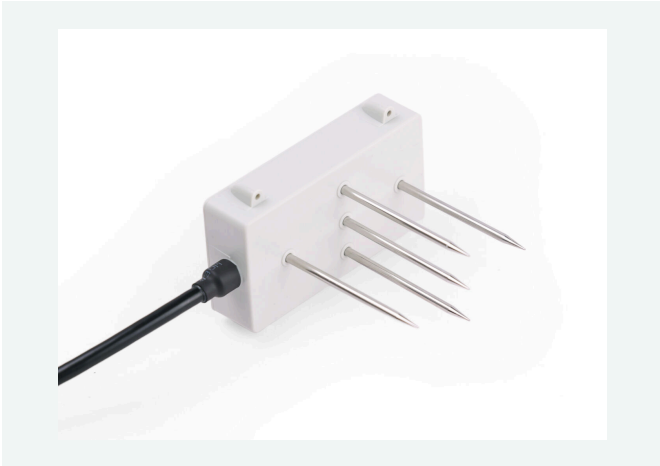
Key Features

- **Suitable for Soil, Rockwool, Cocopeat and Substrate:** Designed for both mineral soils and soilless substrates like rockwool, potting soil, and coco peat, this sensor offers precise, reliable measurements essential for optimizing plant growth.
- **High Precision and Sensitivity:** The sensor delivers high precision and stable performance in various soil conditions, with stainless steel probes designed to optimize EC measurements and minimize substrate disturbance.
- **Durable Design for Long-Term Use:** This IP68-rated sensor is built for tough conditions, suitable for long-term monitoring in applications like scientific research, water-saving irrigation, horticulture, and precision agriculture.
- **Easy Integration and Versatile Application:** This sensor can be seamlessly integrated with the [SenseCAP S2100 LoRaWAN datalogger](#) for efficient data collection and management.

Monitor the key indicators of your soil's health with our advanced IP68 RS485 Soil Moisture, Temperature, and Electrical Conductivity (EC) Sensor, designed for both mineral soils and substrates like rockwool, potting soil, and coco peat, offering precise measurements essential for optimizing plant growth by integrating VWC readings derived from measuring the dielectric constant, and providing the accuracy needed for greenhouses, outdoor farms, and environmental monitoring.

We offer the [SenseCAP S2100 - LoRaWAN® Data Logger](#) and [SenseCAP Sensor Hub 4G Data Logger](#) suitable for RS485 sensors, you can transmit the sensor data to public LoRaWAN® network servers (Helium, TTN, etc.,) or MQTT private servers.

Product Gallery

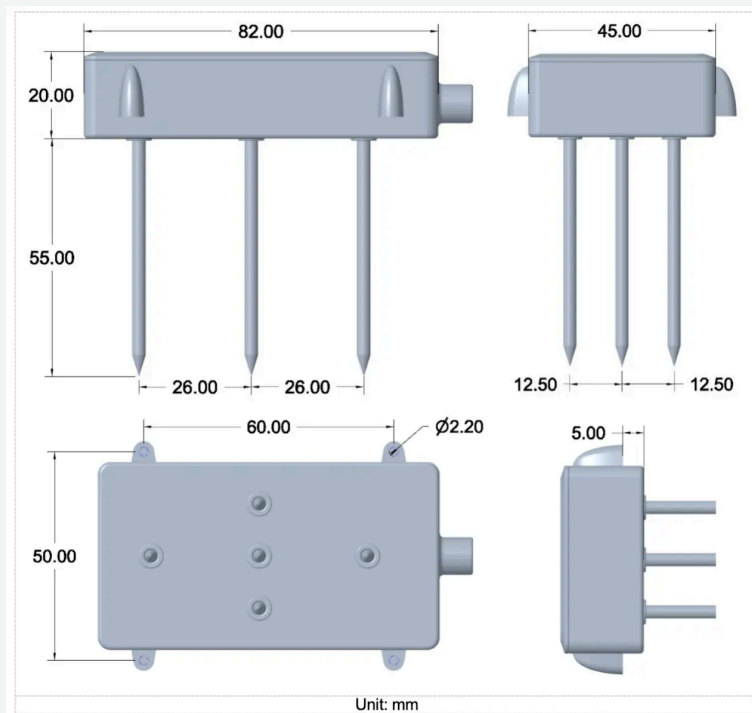


Specification

Output Interface	RS485, Modbus-RTU
Power Supply	3.9-28V/DC

Power Consumption	RS485: Quiescent Current : <4mA Measuring Current : <20mA during 150ms measurement
Substrate Moisture Measurement	Apparent Dielectric Permittivity: Range:1-81 (air - water); Resolution: 0.1(1-40), 0.5(40.00-81); Accuracy: ± 1 (1-40), $\pm 10\%$ of Readings(40-81); Volumetric Water Content (VWC): Range: 0-100%; Resolution: 0.1%; Accuracy: $\pm 3\%$; The VWC range is dependent on the media the sensor is calibrated to. A default calibration will accommodate the necessary ranges for most substrates.
Substrate EC Measurement	Range: 0-20ds/m; Resolution: 0.01ds/m; Accuracy: $\pm 5\%$ (0-7ds/m); $\pm 10\%$ of Readings(7-20ds/m) Temperature compensation: 0-50°C
Substrate Temperature Measurement	Range: -40-80°C; Resolution: 0.1°C; Accuracy: $\pm 0.5^\circ\text{C}$;
IP Ratings	IP68
Operating Temperature	-40-80°C
Sensor Sealed	Epoxy resin
Installation	Surface or buried installation
Cable Length	5 meters
Dimension	90*55*75mm

Hardware Overview



Applications

- **Greenhouse:** Such as growing blueberries, strawberries and other crops.
- **Irrigation:** Integrated with irrigation system to achieve fully automatic planting management.
- **Science Research:** Planting research based on soil rockwool, potting soil, coco peat, and other substrate.

Part List

Sensor	x1
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Compliance & Logistics



HSCODE	9027899090
USHSCODE	9027894590
UPC	
EUHSCODE	9027109000
COO	CHINA

FCC Requirement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

15.21

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy.

If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Resource Links

- <https://www.seeedstudio.com/RS485-Soil-Substrate-Moisture-EC-Temperature-Sensor-p-6246.html>
- [RS485 Substrate Sensor Datasheet](#)
- [Substrate Moisture Sensor Volumetric Water Content User Calibration](#)

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