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INDUSTRIAL PRODUCT DATASHEET

RS485 Mini Soil Moisture, Temperature and EC Sensor: Modbus RTU, Soil and Substrate Monitoring, Bulk EC, Pore EC

The RS485 Mini Soil Moisture, Temperature and EC Sensor is an IP68-rated sensor for monitoring soil and soilless substrates.

SKU	UPDATED	PRICE
100076252	2026-11-11 09:26:57	$89.00(Excl. VAT)



Overview



The RS485 Mini Soil Moisture, Temperature and EC Sensor is an IP68-rated sensor for monitoring soil and soilless substrates. It measures volumetric water content from 0–100%, electrical conductivity up to 0–20 dS/m, and temperatures from -40 to 80°C. With a resin-sealed body, durable sensing rods, RS485 Modbus RTU communication, a wide 3.0–28 V DC power supply range, and low-power consumption, this sensor is designed for long-term and reliable soil monitoring. Built-in reverse polarity, TVS, and ESD protection enhance system stability, making it ideal for smart agriculture, greenhouse monitoring, irrigation management, hydroponics, and research applications.

Key Features

01

Multi-Parameter Soil/Substrate Measurement

Measures volumetric water content, temperature, bulk EC, pore EC, and apparent dielectric permittivity in soil or soilless substrates. This allows users to monitor moisture status, salinity/fertilizer concentration, and substrate condition with one compact sensor.

02

RS485 Modbus RTU Output

Provides a digital RS485 interface with Modbus RTU protocol for stable data transmission and easy integration with data loggers, gateways, controllers, and agricultural monitoring systems. The sensor supports standard Modbus register access for reading measurement values and configuring communication parameters.

03

Wide Measurement Ranges

Supports 0–100% volumetric water content, -40 to 80°C substrate temperature, and 0–20 dS/m bulk EC measurement. It also provides pore EC data through Modbus registers, making it suitable for soil moisture monitoring, irrigation control, and nutrient/salinity management.

04

Low-Power, Wide-Voltage Operation

Operates from a 3.0–28 V DC power supply with low current consumption. The low-power design makes it suitable for battery-powered data loggers, remote field stations, and long-term agricultural monitoring deployments.

05

IP68 Field Protection

Built with an IP68 resin-sealed plastic body and robust epoxyencapsulation, the sensor is designed for wet, humid soil/substrate environments and long-term stable field measurement. Reverse power protection and built-in TVS/ESD protection help improve reliability during installation and protect against wiring mistakes, static discharge, and transient electrical interference.

Product Gallery







Applications

- Field Irrigation Management
- Greenhouse Substrate Monitoring
- Multi-Substrate Monitoring
- Research Plot Soil Balance

Resource Links

- https://www.seeedstudio.com/RS485-Mini-Soil-Moisture-Temperature-and-EC-Sensor-p-6927.html
- Datasheet

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