## RS485 Soil Moisture & Temperature & EC Sensor

#### Features

- Moisture / Temperature / EC all in one
- High reliability and stability
- Universal protocols: MODBUS RS-485
- Wide range power supply: 3.6V ~ 30V
- IP68 rated, suitable for long-term applications
- Can be used in soil, water, nutrient solution, and other substrates
- Strong Anti-interference: made of flame-retardant epoxy resin
- Anti-corrosion, with excellent performance for long-term use
- Easy to use, integrate and install

#### **Applications**

- Agriculture irrigation
- Green house
- Grass farm
- Environment monitoring
- Soil testing
- Other Sensor Applications

#### Introduction

This Soil Moisture & Temperature & EC Sensor MODBUS-RTU RS485 (S-Soil MTEC-02A) is designed with industry standards, featuring high precision and high sensitivity and durability. Incorporating three sensors (soil moistures sensor, soil temperature sensor, and soil electrical conductivity) into one, with auto temperature compensation, this sensor ensures the accuracy of measurements regardless of the environment changes. By measuring the dielectric constant of the soil, it can stably measure the soil VWC (volumetric water content) regardless of various soil types. The measurement conforms to current international standards for soil moisture measurement.

The stainless steel probe can be permanently inserted in the soil with quick testing for long-term use. This soil sensor is IP68 rated, very robust and durable, suitable to be applied at long-term monitoring of soil moisture, temperature and electrical conductivity at scientific experiments, water-saving irrigation, gardening, greenhouses, outdoor farming, horticulture, golf turf management, forestry, precision agriculture, and other professional environmental monitoring scenarios. It can also be applied in the water, nutrient solution, and other kinds of substrates where EC level is needed.

#### **Specifications**

General Parameters		Soil Ten
Product Model	S-Temp&VWC&EC-02A	Range
Interface	RS-485	Accurac
Protocol	MODBUS-RTU RS485	Resolut
Power Supply	3.6 ~ 30V DC	
Current Consumption	6mA@24V DC (quiescent dissipation)	Soil Mo
Operating Temperature	-40 °C to +85 °C	Range
The material of the probe	Anti-corrosion special electrode	
Sealing Material	Black flame retardant epoxy resin	Accurac
IP Rating	IP68	Resolut
Cable Length	5 meters	
Installation	All embedded or probe inserted into	
	the measured medium	Electric
Device Weight	210g	Range
		A

Soil Temperature	
Range	-40 °C to +80 °C
Accuracy	±0.5 °C
Resolution	0.1 ℃

Soil Moisture	
Range	From completely dry to fully saturated (from 0% to 100% of saturation)
Accuracy	±2% (0~50%) ±3% (50~100%)
Resolution	0.03% (0~50%) 1% (50~100%)

Electrical Conductivity	
Range	0 ~ 10000 µs/cm
Accuracy	±3%
Resolution	10 µs/cm
Temperature Compensation	Built in temperature compensation sensor, range 0-50 $^\circ \mathrm{C}$



# RS485 Soil Moisture & Temperature & EC Sensor

### Wiring Diagram



Refer to the user manual for more details.

#### **Probe Dimensions**







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