# SEM2253 Soil Temp. Moisture Sensor

## FEATURES

- The sensor is compact in size, high in measurement accuracy, fast in response and good in interchangeability.
- Good sealing, can be directly buried in the soil for use, and not subject to corrosion.
- The influence of soil quality is small and the application area is wide.
- High precision, reliable performance, ensure normal operation, fast response, high efficiency of data transmission.

## OVERVIEW

SEM2253 Soil moisture sensor is a kind of high precision and high sensitivity sensor based on frequency domain reflection principle and high frequency electronic technology. By measuring the dielectric constant of soil, the true moisture content of various soils can be directly and stably reflected.
Soil moisture sensor can measure the volume percentage of soil moisture, which is the most popular soil moisture measurement method in the world.
It is suitable for water-saving agricultural irrigation, greenhouse, flowers and vegetables, grassland and pasture, soil rapid test, plant culture, scientific experiment and other fields.

## SPECIFICATION

| ITEMS | PARAMETERS |
|---|---|
| Measurement parameters | soil volume moisture content |
| Unit of measurement | % (m3 / m3) |
| Measuring range | 0-100% (30%, 50% or any range can be selected) |
| Measurement accuracy | ± 2% (m3 / m3) in the range of 0-50% (m3 / m3) |
| Output signal | A: Voltage signal (0-2v, 0-2.5v, 0-5V, 0-10V)<br>B: 4 ~ 20mA (current loop)<br>C: RS485 (standard Modbus RTU protocol, device default address: 01) |
| Supply voltage | 5-24 V DC (when the output signal is 0-2v, 0-2.5v, RS485); 12-24 V DC (when the output signal is 0-5V, 0-10V, 4-20mA) |
| Working range | - 30 °C ~ 70 °C |
| Stabilization time | 1 second after power on |
| Response time | < 1s |
| Measurement area | a cylinder with a diameter of 7cm and a height of 7cm centered on the central probe |
| Probe length | 78mm |
| Probe diameter | 4mm |
| Probe material | 316L stainless steel |
| Sealing material | ABS engineering plastic, epoxy resin, waterproof grade IP68 |
| Cable specification | 2m as standard (other cable lengths can be customized, up to 1200m) |

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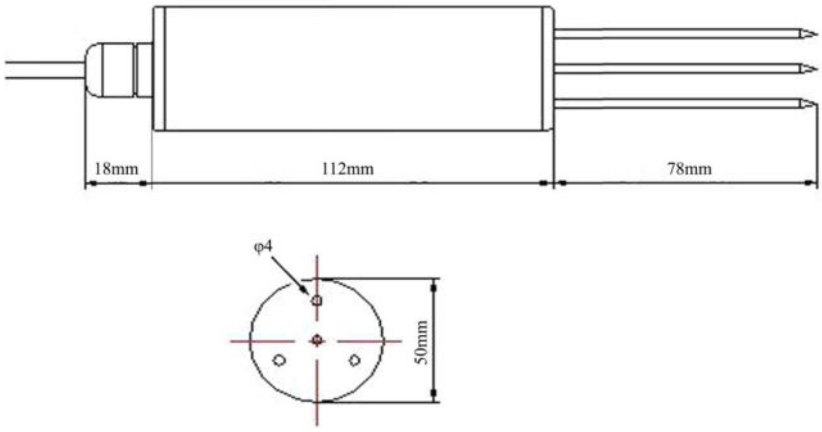
## OUTLINE CONSTRUCTURE




Unit:mm

## APPLICATION

**1.RAPID MEASUREMENT**

Choose a suitable measurement location, avoid stones, ensure that the steel needle does not touch hard objects, throw away the topsoil according to the required measurement depth, maintain the original tightness of the soil below, hold the sensor vertically into the soil, insert It is not allowed to sway from side to side. It is recommended to measure multiple times to get the average value within a small range of a measuring point.

**2.BURIED MEASUREMENT**

Dig a pit with a diameter >20cm vertically, insert the steel needle of the sensor horizontally into the pit wall at a predetermined depth, and fill the pit tightly. After a period of stability, it can be measured and recorded for several days, months or even longer.

Rapid test

Buried test

## ORDER CODE

| | | | |
|---|---|---|---|
| **SEM2253** | **Soil temperature moisture sensor** | | |
| | **CODE** | Function | |
| | **A** | Soil moisture | |
| | **B** | Soil moisture + soil temperature | |
| | | **CODE** | Signal output |
| | | **A** | Voltage signal (0-2v, 0-2.5v, 0-5V, 0-10V) - Choose one |
| | | **B** | Current output: 4 ~ 20mA (current loop) |
| | | **C** | Digital output: RS485 |
| | | **C** | More customized |
| SEM2253 | A | 1 | Order example |