

# HC-50 Soil matrix suction (water potential) sensor

The potential energy of soil water refers to the energy required to extract a unit of water from the soil under isothermal conditions. When the soil is saturated with water, the water potential is zero, and the water content is in a low dry saturation state. The water potential is negative, and the drier the soil, the greater the negative value. In the study of plant water demand, soil water potential is an important indicator for judging the degree of drought. The HC-50 matrix suction (water potential) sensor is composed of a humidity sensor and a porous ceramic material with a known water release curve. When the porous ceramic material reaches water balance with the surrounding soil, the humidity sensor measures the moisture content of the porous ceramic material and converts it into water potential based on the water release curve. This sensor can be easily inserted into soil profile pits and wrapped with wet soil around it. Measurement and recording are very simple, maintenance free, and can measure a large range of soil water potential without calibration. The sensor has a compact design, high measurement accuracy, fast response speed, and good sealing performance. It can be inserted into soil layers for a long time or directly buried in soil for use, and is not easily corroded, with little impact on soil quality, Suitable for water-saving agricultural irrigation, greenhouse, flowers and vegetables, grassland and pasture, soil rapid testing, plant cultivation, drought, frozen soil, roadbed and other special fields of soil water research and scientific experiments.



## Functional characteristics:

There is no drift caused by degradation in ceramic materials.

- ◆ Salt insensitivity, even in high salt environments with variable salt content, soil sensors are still accurate.
- ◆ The overlapping injection molding process of epoxy resin ensures its suitability for long-term field monitoring and research.

## Technical parameter:

Range: -100~-10Kpa

Accuracy:  $\pm .025$ Kpa

Power supply voltage: 5~20VDC

Output: 0~2.5VDC, 4~20mA, RS485

Response time:  $\leq 200$ ms

Working temperature: -40~85°C

Waterproof grade: IP68

Overall weight: 200 (g)

External dimensions: length 90.5(mm) x width 30.7(mm) x height 11 (mm)

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