

Soil pH and Temperature Sensor

DIG-SPH2



Description

Developed using solid AgCl reference electrode and pure metal pH sensitive electrode. It has the characteristics of high measurement accuracy and long-term stable signal, the isolation circuit design is suitable for burying in soil for long-term online measurement of pH and Temperature.

Notable features are:

- In-build temperature compensation.
- Multi-directional protection functions for power lines, ground lines, and signal lines to prevent damage caused by reverse connection and wrong connections.
- Low measurement cost with high precision and reliability.

Calibration and Maintenance

This sensor supports user calibration, but it is limited to the calibration of three pH standard solutions of 4.00, 6.86, and 9.18, which are available on the market. Before calibration, clean the electrode and put it in the pH standard solution. Observe that the signal is stable. The immersion time of the newly cleaned electrode may take up to 24 hours to stabilize. When the signal is stable, the calibration can be performed.

The PH-sensitive electrode metal is very brittle and has low strength. Avoid force and impact. After being buried in the soil for a long time (3 months to half a year), the electrodes need to be cleaned. They can be lightly polished with high-grade sandpaper, or washed with 5% hydrochloric acid and soaked for a few minutes. The metal turns silver as bright as new, and then rinsed with pure water. When the reference electrode is not in use, it should be kept moist.

Do not touch oily substances between the two electrodes to avoid oil film covering and blocking the electrical circuit.

Technical Specifications

Measured Variable	Range
Range	-40 to 85°C 3 to 10 PH
Supply	5-24 VDC
Accuracy	<0.25 PH <±0.4°C (10°C~40°C), <±0.6°C (other)
Resolution	0.01PH
Temperature Compensation Range	0-50°C
Response time	2 - 15 seconds
Stabilization Time	30 minutes - 24 hours
Operating Environment	-10 to 70°C
Protection	IP68

Dimensions



All dimensions in mm.

Measurement methods

1. Preparation before measurement

It should be placed in pure water for 24 hours to activate before being placed for more than 7 days. If it is not activated, it should be pre-buried in the soil for at least 24 hours to ensure measurement accuracy.

2. Quick measurement method

Select a place where the soil is relatively soft and moist, and pave the surface soil according to required measurement depth. It is best to wet the measurement point with distilled water, purified water or rainwater to form a slurry, pick out the rocks, and then insert the probe into the soil gently and slowly, remember not to use excessive force, make sure that the probe does not touch hard objects such as rocks, and do not shake back and forth when inserting. After inserting, pile up the soil to cover the sensor body and fix it, after stabilizing for a period of time, the PH can be measured.

3. Buried measurement method

Dig a pit of appropriate diameter vertically to the depth as required for measurement, then bury the sensor at the bottom of the pit according to the rapid measurement method, and then fill and compact the pit. After stabilizing for a period of time, you can perform continuous measurements and recording for several days, months or even longer.