

What is soil sensor?

Soil sensor is a device that detects events or changes in the soil and sends the information to other electronics device.

Principle of soil sensor working:

- **Data Acquisition:** used to measures specific properties of soil.
- **Signal Conversion:** converts the measured data into digital signals.
- **Signal Transmission:** The digital signals are transmitted to a computer or controller via wireless or wired communication methods.
- **Data Processing:** processes the data to extract useful information, such as soil moisture, temperature, pH value, etc.

Some of soil sensor:

1. Soil moisture sensor
2. Soil temperature sensor
3. Soil conductivity sensor
4. Soil pH sensor
5. Soil NPK sensor

Types of soil moisture sensors:

- ❖ *Tensiometers*
- ❖ Gypsum block or Electrical resistance blocks Method
- ❖ *Time-Domain Reflectometry (TDR) Sensor:*

Benefits of Soil Moisture Monitoring:

- Water Conservation
- Crop Yield Optimization
- Cost Savings
- Environmental Benefits

What is soil temperature sensor?

Soil temperature sensor is a device used to measure the temperature of the soil, its effect on seed germination, nutrient availability, and microbial activity.

Types of Soil Temperature Sensors

- Resistance Temperature Detectors (RTDs).
- Thermocouples.
- Thermistors.
- Infrared Sensors.

Soil NPK sensor:

The soil NPK sensor is suitable for detecting the content of nitrogen, phosphorus, and potassium in the soil, and judging the fertility of the soil. Thereby facilitating the systematic evaluation of the soil condition.

1. Simple to use, fast measurement, unlimited detection times.
2. High measurement accuracy, it is not easy to damage.
3. Resistant to acid and alkali corrosion and can be buried in soil for long-term dynamic testing.