SENSE IT
TECHNOLOGIES
MONITORING AND CONTROL SOLUTIONS



LoRaWAN Soil Humidity Temperature PH EC

SKU: SI-LRW-SOIL-PH-001

Monitor soil moisture, temperature, pH and electrical conductivity remotely with a rugged, battery-powered LoRaWAN sensor connected to SenseItCloud. View current readings, analyse historical trends and receive alerts when soil conditions move outside configured limits.

OVERVIEW

The LoRaWAN Soil Condition Monitor provides continuous insight into four critical soil measurements: moisture, temperature, pH and electrical conductivity (EC). It helps growers, farm managers and researchers make informed irrigation, fertilisation and crop-management decisions using accurate field data.

Measurements are transmitted wirelessly to SenseItCloud using long-range, low-power LoRaWAN communication. From any web browser or mobile device, users can view current conditions, compare historical trends and configure alerts for important thresholds.

If network connectivity is temporarily interrupted, the monitor can store up to 3,000 readings internally and automatically transmit the retained data once its LoRaWAN connection is restored. This helps maintain a complete measurement history, even in remote or challenging locations.

The battery-powered design eliminates the need for mains electricity at each monitoring point. With an IP68-rated enclosure and a wide operating temperature range, the unit is suitable for permanent outdoor deployment in agricultural and environmental monitoring applications.

Reporting intervals can be remotely configured from 5 minutes to 24 hours, allowing users to balance monitoring frequency and battery life according to their operational requirements. At the standard hourly reporting interval, the rechargeable battery can provide more than nine months of operation between charges.

KEY FEATURES

- Simultaneous soil moisture, temperature, pH and EC monitoring
- Live readings available through SenseItCloud
- Historical graphs and trend analysis
- Configurable threshold alerts
- Remote access from desktop and mobile devices
- Long-range LoRaWAN wireless communication
- Battery-powered operation for remote installations
- More than nine months of battery life with hourly reporting
- Adjustable reporting intervals from 5 minutes to 24 hours
- Internal storage for up to 3,000 readings
- Automatic data recovery after network interruptions
- IP68-rated enclosure for outdoor environments

- Suitable for rain, dust and high-UV conditions
- Long-range coverage for farms and remote sites
- Simple wall-mounted installation
- Scalable across multiple fields and monitoring locations

TECHNICAL SPECIFICATIONS

Measurement

- Parameters: Soil moisture, soil temperature, pH and electrical conductivity
- Soil temperature range: -40°C to 80°C
- Soil temperature accuracy: ±0.5°C
- Soil temperature resolution: 0.1°C
- Soil moisture range: 0% to 100% RH
- Soil moisture accuracy: ±2%
- Soil moisture resolution: 0.1% RH
- Electrical conductivity range: 0 to 20,000 µS/cm
- Electrical conductivity resolution: 1 µS/cm
- pH range: pH 3 to pH 9
- pH resolution: 0.1 pH

Connectivity

- Wireless technology: LoRaWAN®
- Protocol: LoRaWAN® 1.0.3
- Activation method: OTAA
- Device class: Class A
- Frequency band: EU868
- Maximum transmit power: 21 dBm
- Receiver sensitivity: -137 dBm at 125 kHz, SF12
- Typical urban range: At least 2 km
- Maximum line-of-sight range: Up to 5 km

Data and Cloud

- Cloud platform: SenseItCloud
- Configurable reporting interval: 5 minutes to 24 hours
- Default reporting interval: 1 hour
- Internal storage: Up to 3,000 readings
- Automatic transmission of stored readings after network reconnection
- Remote configuration and monitoring

Power

- Power supply: 1 × rechargeable 3.7 V 18650 lithium-ion battery
- Typical battery life: More than 9 months per charge with hourly reporting

Environmental

- Operating temperature: -40°C to 85°C
- Ingress protection: IP68
- Suitable for rain, dust and high-UV environments
- Designed for permanent outdoor installation

Physical

- Dimensions: 131 × 62.7 × 27.5 mm

Installation

- Wall mounting
- Remote field installation

Applications

- Precision agriculture
- Irrigation management
- Soil condition monitoring
- Crop monitoring
- Fertiliser management
- Environmental monitoring
- Agricultural research

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