

# NB-IoT Soil pH Sensor

## NSPH01



## OVERVIEW:

The Dragino NSPH01 is a **NB-IoT soil pH sensor** for IoT of Agriculture. It is designed to measure the **soil pH** and **soil temperature**, so to send to the platform to analyze the soil acid or alkali level. The probe is IP68 waterproof.

NSPH01 probe is made by Solid AgCl reference electrode and Pure metal pH sensitive electrode. It can detect **soil's pH** with high accuracy and stable value. The NSPH01 probe can be buried into soil for long time use.

NarrowBand-Internet of Things (NB-IoT) is a **standards-based low power wide area (LPWA) technology** developed to enable a wide range of new IoT devices and services. NB-IoT significantly improves the power consumption of user devices, system capacity and spectrum efficiency, especially in deep coverage.

NSPH01 supports different uplink methods include **TCP, MQTT, UDP and CoAP** for different application requirement.

NSPH01 is powered by **8500mAh Li-SOCI2 battery**, It is designed for long term use up to 5 years. (Actually Battery life depends on the use environment, update period & uplink method)

To use NSPH01, user needs to check if there is NB-IoT coverage in the installation area and with the bands NSPH01 supports. If the local operator supports it, user needs to get a **NB-IoT SIM card** from local operator and install NSPH01 to get NB-IoT network connection.

## Features:

- Ultra-low power consumption
- pH and Temperature alarm function
- 8500mAh Battery for long term use
- Support pH calibration by end user
- AT Commands to change parameters
- NB-IoT Bands: B1/B3/B8/B5/B20/B28 @H-FDD
- Monitor soil pH with temperature compensation
- Micro SIM card slot
- Uplink on periodically
- Monitor Battery Level
- Monitor soil temperature
- IP66 Waterproof Enclosure
- IP68 rate for the Sensor Probe
- Downlink to change configure

## Specifications:

### Common DC Characteristics:

- Supply Voltage: 2.1v ~ 3.6v
- Operating Temperature: -40 ~ 85°C

### NB-IoT Spec:

- - B1 @H-FDD: 2100MHz
- - B3 @H-FDD: 1800MHz
- - B8 @H-FDD: 900MHz
- - B5 @H-FDD: 850MHz
- - B20 @H-FDD: 800MHz
- - B28 @H-FDD: 700MHz

## Applications:

- Smart Agriculture

Order Info : NSPH01

## Dragino Technology Co., Limited

Room 202, Block B, BCT Incubation Bases (BaoChengTai), No.8 CaiYunRoad  
LongCheng Street, LongGang District ; Shenzhen 518116, China  
Direct: +86 755 86610829 | Fax: +86 755 86647123

**WWW.DRAGINO.COM**  
sales@dragino.com