

NB-IoT Soil Moisture & EC Sensor

SE01-NB



OVERVIEW:

The Dragino SE01-NB is a NB-IoT Soil Moisture & EC Sensor for IoT of Agriculture. It is designed to measure the soil moisture of saline-alkali soil and loamy soil. The soil sensor uses FDR method to calculate the soil moisture with the compensation from soil temperature and conductivity. It also has been calibrated in factory for Mineral soil type.

It detects Soil Moisture, Soil Temperature and Soil Conductivity, and uploads the value via wireless to NB-IoT IoT Server.

SE01-NB supports different uplink methods including MQTT, MQTTs, UDP & TCP for different application requirement, and support uplinks to various IoT Servers.

SE01-NB supports BLE configure and OTA update which make user easy to use.

SE01-NB is powered by 8500mAh Li-SOCI2 battery, it is designed for long-term use up to several years.

SE01-NB has optional built-in SIM card and default IoT server connection version. Which makes it works with simple configuration.

Features:

- NB-IoT Bands: B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B28/B66/B70/B85 @H-FDD
- Ultra-low power consumption
- Monitor Soil Moisture
- Monitor Soil Temperature
- Monitor Soil Conductivity
- Multiply Sampling and one uplink
- Support BLE remote configure and update firmware
- Uplink on periodically
- Downlink to change configure
- IP66 Waterproof Enclosure
- 8500mAh Battery for long term use
- Nano SIM card slot for NB-IoT SIM

Order Info:

Part Number: SE01-NB-XX

XX:

- **GE:** General version (Exclude SIM card)
- **1D:** with 1NCE* 10 years 500MB SIM card and Pre-configure to DataCake server

Specification:

Common DC Characteristics:

- Supply Voltage: 2.5v ~ 3.6v
- Operating Temperature: -40 ~ 85°C

Soil Moisture:

- Range: 0-100.00 V/V %
- Resolution: 0.01 V/V %
- Accuracy: $\pm 3\%$ (0-53%), $\pm 5\%$ (>53%)
- Measure Method: FDR, with temperature & EC compensate

Soil Temperature :

- Range: -40 C ~ 85 C
- Resolution: 0.01 C
- Accuracy: -10 C ~ 50 C: <0.3 C, All other: <0.6 C
- Measure Method: RTD, and calibrate

Soil Conductivity:

- Range: 0-20000 uS/cm(25 C)(0-20.0EC)
- Resolution: 1 uS/cm
- Accuracy: 2%FS
- Measure Method: Conductivity, with temperature compensate

NB-IoT Spec:

- NB-IoT Module: BC660K-GL
- Support Bands: B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B28/B66/B70/B85 @H-FDD

Battery:

- Li/SOCI2 un-chargeable battery
- Capacity: 8500mAh
- Self-Discharge: <1% / Year @ 25°C
- Max continuously current: 130mA
- Max boost current: 2A, 1 second

Power Consumption:

- STOP Mode: 10uA @ 3.3v
- Max transmit power: 350mA@3.3v