



Agriculture & Weather IoT Product Providers



Provide accurate meteorological and agricultural sensors



Temperature / Humidity



Water



The soil



Environment



Sensing



Company introduction

Changsha Zoko Link Technology Co., Ltd. (Brand: NiuBoL) specializes in the production and sales of sensors and monitoring equipment, including:

Soil Sensors: pH sensors, temperature and moisture sensors, electrical conductivity sensors

Weather and Environmental Sensors: Automatic weather stations, wind speed and direction sensors, ultrasonic integrated sensors, air temperature, humidity and pressure sensors, rain sensors, visibility sensors, Snow Depth Sensor, Solar Radiation Sensor, Water quality sensor, liquid level sensor, flow meter

Our solutions are widely used in industrial monitoring, precision agriculture, greenhouse automation, irrigated farming, forest monitoring, smart agriculture, solar energy, water quality monitoring, and environmental & meteorological monitoring.

With reliable quality, a complete product range, and competitive pricing, our solutions are exported globally, including:

Africa: Algeria, Egypt, Guinea, Libya, Liberia, Mauritius, Morocco, Madagascar, Malawi, Nigeria, Uganda, Republic of the Congo, Tanzania, Tunisia, Senegal, Seychelles, Zimbabwe and other countries

Asia: Bangladesh, Cambodia, India, Indonesia, Israel, Japan, Kuwait, Lebanon, Malaysia, Myanmar, Mongolia, Nepal, Pakistan, Palestine, Philippines, Qatar, Saudi Arabia, Singapore, South Korea, Sri Lanka, Thailand, Turkey, United Arab Emirates, Vietnam and others

Europe: UK, Albania, Belgium, Belarus, Cyprus, Denmark, France, Germany, Italy, Netherlands, Portugal, Romania, Russia, Serbia (including Kosovo), Spain, Switzerland, and others

Oceania: Australia, New Zealand

Americas: USA, Canada, Brazil, Mexico, Chile, Colombia, Peru, Argentina, and others

We are committed to continuous development, market expansion, and creating win-win partnerships with clients worldwide.

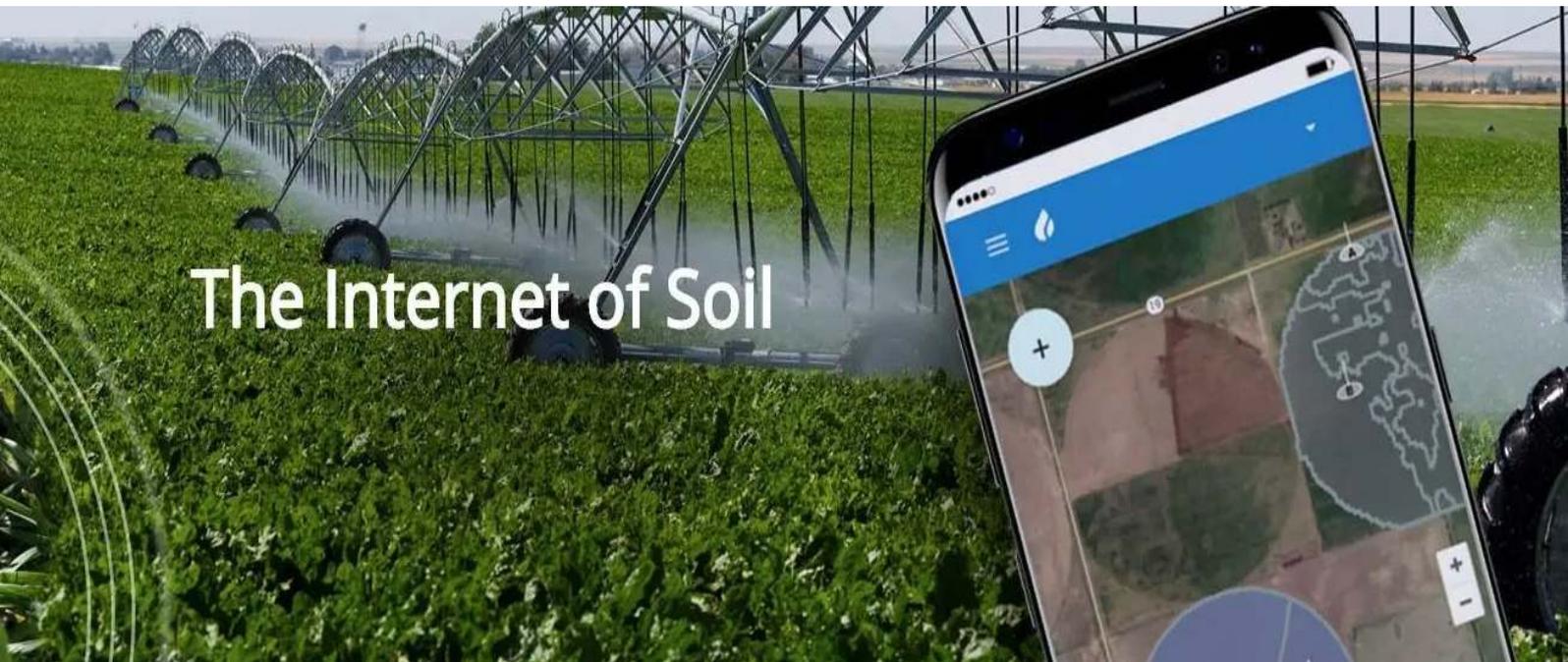
At NiuBoL, our business philosophy is: "Seek truth and be pragmatic, strive for excellence."

Product quality: Every team member ensures meticulous attention to detail and maintains the highest standards.

Customer service: We provide professional guidance to help clients select the most suitable products.

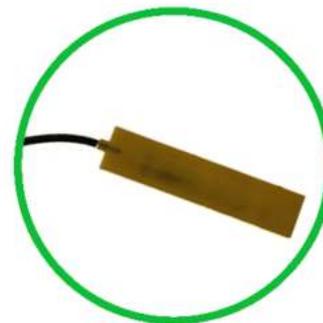
After-sales support: Every customer feedback is valued, and all requests are addressed promptly—because a perfect after-sale experience reflects the true value of our products.

With an ISO9001 certified quality management system, along with CE and RoHS certifications, our products meet international standards for safety, environmental compliance, and reliability.



The Internet of Soil

Agriculture sensor series



NBL-S-THR/Soil temperature and moisture sensor is a high-precision, high-sensitivity soil moisture measuring instrument. The electromagnetic wave pulse emitted by the sensor is transmitted to the probe through the coaxial cable, and then enters the soil medium to measure the apparent dielectric constant of the soil, thereby obtaining the real water content of the soil. The influence of metal ions, etc.

It can be widely used in soil moisture monitoring, water-saving irrigation, greenhouses, grassland pastures, soil rapid testing and other fields.



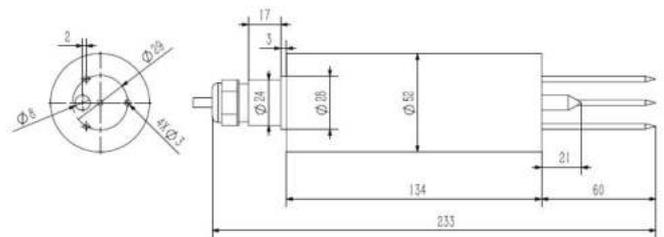
Performance characteristics

- ▮ Simultaneously measure soil temperature and soil moisture
- ▮ Withstand strong external impact, not easy to damage
- ▮ Completely sealed, acid and alkali corrosion resistant
- ▮ High precision, fast response, good interchangeability

Technical parameter

Measuring range	Moisture 0-100%RH, temperature -40-100°C
Power supply method	DC 12-24V
Resolution	Soil moisture 0.1%, temperature 0.1°C
Accuracy	Soil moisture ±3%, temperature ±0.5°C
Product power consumption	1.8mW
Signal output	<input type="checkbox"/> 4~20mA <input type="checkbox"/> RS485
Product power consumption	About 0.3W
Runtime environment	-40°C ~ 80°C
Protection class	Ip68
Measurement principle	TDR
Interchange accuracy	<3%
Retest error	<1%
Response time	<1S
Measurement settling time	1S

Product Size



Installation method



vertical measurement
(1)



Buried measurement
(2)

Instructions for use

Wire the sensor according to the instructions in the wiring method, then insert the probe pin of the sensor into the soil where the humidity is to be measured, turn on the power supply and the switch of the collector, and then the soil temperature and humidity at the measurement point can be obtained.

Application field



Agricultural irrigation



Greenhouse farming



Soil Quick Test



Meadow pastures



Flowers and vegetables

NBL-S-TM/The soil temperature and moisture sensor has stable performance and high sensitivity, and can measure soil temperature and soil moisture at the same time; by measuring the dielectric constant of soil, it can directly and stably reflect the real water content of various soils. The soil moisture sensor can measure the volume percentage of soil moisture and is a soil moisture measurement method in line with current international standards.

Suitable for soil moisture monitoring, scientific experiments, agricultural irrigation, greenhouses, flowers and vegetables, grassland and pastures, soil rapid testing, plant cultivation and other occasions.



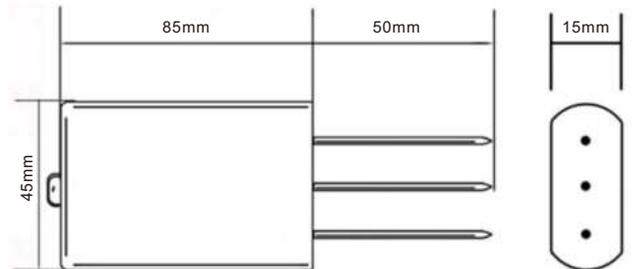
Performance characteristics

- | Simultaneously measure soil temperature and soil moisture
- | Withstand strong external impact, not easy to damage
- | Completely sealed, acid and alkali corrosion resistant
- | High precision, fast response, good interchangeability

Technical parameter

Soil temperature range	-40~80°C Resolution: 0.1, Accuracy: ±0.5
Soil moisture range	0-100%RH Resolution: 0.1%RH, Accuracy: 5%
Supply voltage	DC12V-24V □ DC 5v-24V
Signal output	□RS485 □Modbus protocol
Measurement principle: soil moisture	FDR
Protection class	Ip68 submerged in water for long-term use
Operating environment	-40~85°C
Probe material:	anti-corrosion special electrode
Sealing material	Black flame retardant epoxy resin
Installation method:	all buried or all probes are inserted into the measured medium
Default cable length:	5 meters, cable length can be customized
Connection method	Pre-assembled cold-pressed terminals
External dimensions	45*15*135mm
Electrode length	50mm

Product Size



Installation method



vertical measurement
(1)



Buried measurement
(2)

Instructions for use

Wire the sensor according to the instructions in the wiring method, then insert the probe pin of the sensor into the soil to be measured, turn on the power supply and the switch of the collector, and you can obtain the soil temperature and soil moisture at the measurement point

Application field



Agricultural irrigation



Greenhouse farming



Soil Quick Test



Meadow pastures



Flowers and vegetables

NBL-S-TMC/soil temperature & moisture & EC sensor has stable performance and high sensitivity, and can measure soil temperature and soil humidity at the same time; by measuring the dielectric constant of soil, it can directly and stably reflect the real moisture content of various soils. The soil moisture sensor can measure the volume percentage of soil moisture and is a soil moisture measurement method in line with current international standards.

Suitable for soil moisture monitoring, scientific experiments, agricultural irrigation, greenhouses, flowers and vegetables, grassland and pastures, soil rapid testing, plant cultivation and other occasions.

Performance characteristics

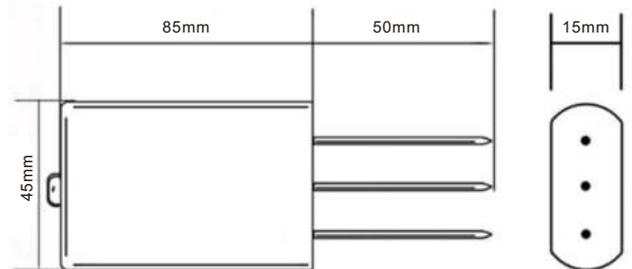
- Simultaneous measurement of soil temperature & soil moisture & electrical conductivity
- Withstand strong external impact, not easy to damage
- Completely sealed, acid and alkali corrosion resistant
- High precision, fast response, good interchangeability

Technical parameter

Soil temperature range	-40~80℃ Resolution: 0.1, Accuracy: ±0.5
Soil moisture range	0-100%RH Resolution: 0.1%RH, Accuracy: 5%
Conductivity range	0-10000us/cm. Accuracy: ±3%
Supply voltage	DC5V-24V <input type="checkbox"/> DC12V-24V
Signal output	<input type="checkbox"/> RS485
Measurement principle: soil moisture FDR	
Protection class	Ip68 submerged in water for long-term use
Operating environment	-40~85 °C
Probe material: anti-corrosion special electrode	
Sealing material	Black flame retardant epoxy resin
Installation method: all buried or all probes are inserted into the measured medium	
Default cable length: 5 meters, cable length can be customized	
Connection method	Pre-assembled cold-pressed terminals
External dimensions	45*15*135mm
Electrode length	50mm



Product Size



Installation method



vertical measurement (1)



Buried measurement (2)

Instructions for use

Wire the sensor according to the instructions in the wiring method, then insert the probe pin of the sensor into the soil to be measured, turn on the power supply and the switch of the collector, and you can obtain the soil temperature and soil moisture & EC at the measurement point

Application field



Agricultural irrigation



Greenhouse farming



Soil Quick Test



Meadow pastures



Flowers and vegetables

NBL-S-TMC-7/The 7-in-1 Soil integrated Sensor is a multi-parameter sensor that combines temperature and humidity, PH, and NPK. By measuring the dielectric constant of soil, it can directly and stably reflect the real moisture content of various soils. It is suitable for soil moisture monitoring, scientific experiments, water-saving irrigation, greenhouses, flowers and vegetables, grass pastures, soil quick test, plant cultivation, wastewater treatment, fine agriculture and other occasions. The input power supply, sensing probe and signal output of the sensor are completely isolated, safe and reliable, with beautiful appearance and easy installation, and the probe is made of stainless steel, which is corrosion-resistant and stable in performance.



Performance characteristics

- | Simultaneous measurement of soil temperature & moisture & EC & pH & NPK
- | Withstand strong external impact, not easy to damage
- | Completely sealed, acid and alkali corrosion resistant
- | High precision, fast response, good interchangeability

Technical parameter

Soil temperature range	-40~80°C Resolution: 0.1, Accuracy: ±0.5
Soil moisture range	0-100%RH Resolution: 0.1%RH, Accuracy: ±3%
Conductivity range	0-10000us/cm. Accuracy: ±10%
NPK range:	0-2000mg/Kg Accuracy of NPK: ±2%
PH effective range:	3-10PH PH precision: ±0.6PH
Supply voltage	DC5V-24V <input type="checkbox"/> DC12V-24V
Signal output	<input type="checkbox"/> RS485
Protection class	Ip68 submerged in water for long-term use
Operating environment	-40~80°C
Sealing material	Black flame retardant epoxy resin
Installation method: all buried or all probes are inserted into the measured medium	
Default cable length: 5 meters, cable length can be customized	
Connection method	Pre-assembled cold-pressed terminals
Measurement principle:	Soil moisture FDR
Electrode length	65mm

Size

Five-pin design, probe material for the solid stainless steel three, hollow stainless steel, a zinc alloy.

Sensor: total length 138±1mm, width 45mm ±1mm, thickness 15±1mm.

Sensor probe: length 65mm±1mm, diameter 3 ±0.2mm.

Probe material: anti-corrosion special electrode.

Installation method



vertical measurement
(1)



Buried measurement
(2)

Instructions for use

Wire the sensor according to the instructions in the wiring method, then insert the probe pin of the sensor into the soil to be measured, turn on the power supply and the switch of the collector, and you can obtain the soil temperature and soil moisture & EC & pH & NPK at the measurement point.

Application field



Agricultural irrigation



Greenhouse farming



Soil Quick Test



Meadow pastures



Flowers and vegetables

NBL-S-NPK/The soil nitrogen, phosphorus and potassium sensor has stable performance and high sensitivity. It can judge the fertility of the soil by detecting the content of nitrogen, phosphorus and potassium in the soil to evaluate the soil condition.

It is suitable for soil moisture monitoring, scientific experiments, agricultural irrigation, greenhouses, flowers and vegetables, grassland pastures, soil rapid testing, plant cultivation and other occasions.



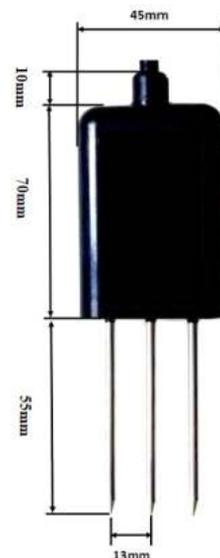
Performance characteristics

- | Measure the NPK content of the solution
- | Withstand strong external impact, not easy to damage
- | Completely sealed, acid and alkali corrosion resistant
- | High precision, fast response, good interchangeability

Technical parameter

Soil NPK	Range 0-2000mg/kg
	Resolution 1mg/kg(mg/l)
	Accuracy ±2%F.s
Supply voltage	DC 12V-24V DC5V-24V
Output method	Rs485
Static power	10mA@12V DC
Protection class	Ip68
External dimensions	45*15*135mm
Working environment	-40~85℃
Sealing material	Black epoxy

Product Size



Installation method



vertical measurement
(1)



Buried measurement
(2)

Instructions for use

Wire the sensor according to the instructions in the wiring method, then insert the sensor probe pin into the soil to be measured, turn on the power supply and the switch of the collector, and the soil NPK parameters at the measurement point can be obtained.

Application field



Agricultural irrigation



Greenhouse farming



Soil Quick Test



Meadow pastures



Flowers and vegetables

NBL-S-PH/Soil PH value sensor, which solves the shortcomings of traditional soil PH, such as needing to be equipped with professional display instrument, cumbersome calibration, difficult integration, high power consumption, high price, and difficult to carry.

Can be widely used in agricultural irrigation, flower gardening, grassland pastures, soil rapid testing, plant cultivation, scientific experiments and other fields.



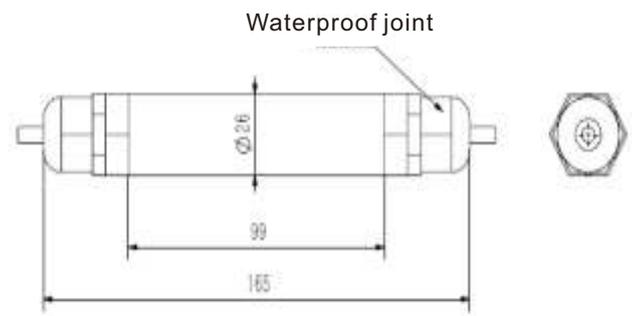
Performance characteristics

- | Not easy to block, maintenance free
- | High integration and small size
- | Low power consumption, easy to carry
- | Real low cost, low price, high performance

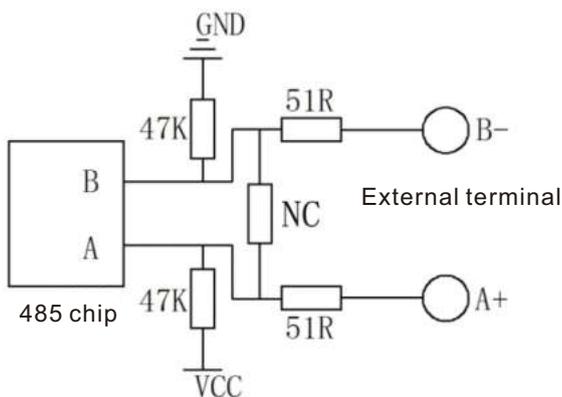
Technical parameter

Measuring range	0-14pH
Accuracy	±0.1pH
Resolution	0.01pH
Response time	<10 seconds (in water)
Power supply method	DC 12V-24V
Output format	<input type="checkbox"/> Rs485 <input type="checkbox"/> 0 ~ 5V <input type="checkbox"/> 4 ~ 20mA
Instrument cable length	10 meters
Working environment	Temperature 0~80℃, humidity 0~95%RH
Power consumption	0.2W
Shell material	Waterproof plastic case
Transmitter size	98*66*49mm

Product Size



Rs485 circuit



Specifications and models

Model	Power supply	output method	Description
NBL-S-PH			PH sensor (transmitter)
	12V-24V		12V-24V power supply
		A1	4-20mA
		V	0-5V
		W2	Rs485

Example: 12V-A1: Soil PH Sensor (Transmitter)
12V power supply, 4-20mA current signal output

Application field



Agricultural irrigation



Greenhouse farming



Soil Quick Test



Meadow pastures



Flowers and vegetables

NBL-S-LM/The leaf temperature and humidity sensor can accurately measure the leaf surface humidity, and can monitor the trace moisture or ice crystal residue on the leaf surface. The shape of the sensor adopts the imitation blade design, which simulates the characteristics of the page, so it can more accurately reflect the situation of the leaf environment.

The low power consumption allows for long term uninterrupted monitoring. It is easy to install and can be hung from either a greenhouse shed or a weather station mast.

Performance characteristics

- Multi-application
- Low power consumption
- Long-term dynamic detection
- Easy to install

Technical parameter

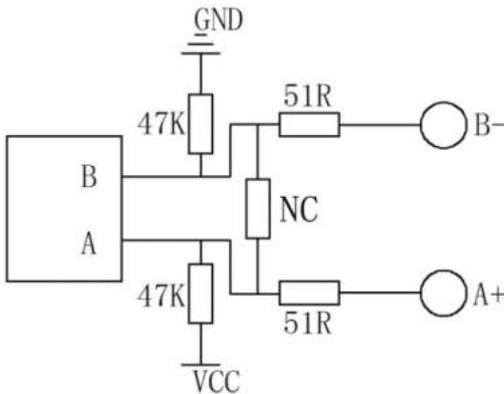
Leaf Temperature	Measuring range: $-20^{\circ}\text{C}\sim 80^{\circ}\text{C}$
	Resolution: 0.1°C
	Accuracy: $\pm 1^{\circ}\text{C}$ (25 $^{\circ}\text{C}$)
Leaf humidity	Measuring range: $0\sim 100\%$
	Resolution: 0.1%
	Accuracy: $\pm 5\%$ (25 $^{\circ}\text{C}$)
Power supply	DC12V
Signal output	RS-485
Response time	<1s
Working current	17ma (DC12)
Power consumption	DC12V $\leq 0.22\text{W}$
Settling time	About 10 seconds after power up
Protection class	IP65



External dimensions



Rs485 circuit



Wiring methods

Purchase transmitters separately.
The transmitter matching line wire sequences are

Line color	Output signal:RS485
Red	power +
Black (green)	power -
Yellow	A+/TX
Blue	B-/RT

Application field



Agricultural irrigation



Greenhouse farming



Soil Quick Test



Vegetation



Flowers and vegetables

The NiuBoL 8-in-1 Soil Sensor Soil Multi-Parameter Analyzer is a high-precision, multifunctional portable device specifically designed for soil environmental monitoring. It can be connected to the user's Android or HarmonyOS smartphone (requires compatibility with version 4.3 and below) to measure eight key soil parameters in real time and rapidly:

Soil temperature & Soil moisture (volumetric water content) & Soil EC (electrical conductivity) & Soil salinity &NPK

With its excellent measurement accuracy, good stability, and simple operation, this product has become an ideal tool in the fields of water-fertilizer integration, environmental monitoring, and scientific research.



Technical parameter

Parameter	Range	Accuracy	Resolution
Soil Temp	-40 ~ 80°C	±0.3°C	0.1°C
Soil Moisture	0-100% (m³/m³)	±2%	0.1% (m³/m³)
Soil EC	0-20000 µS/cm	±3%	1 µS/cm
Soil Salinity	0-20000 mg/L	±3%	1 mg/L
Available Nitrogen	0-1999 mg/kg	±3%	1 mg/kg
Available Phosphorus	0-1999 mg/kg	±3%	1 mg/kg
Available Potassium	0-1999 mg/kg	±3%	1 mg/kg
Soil pH	3-10	±0.2	0.01

Measurement methods

Plug-and-Play — Direct Mobile Connection:

Connect directly to Android / HarmonyOS (version 4.3 and below) smartphones via the USB Type C interface, with no additional power supply or data acquisition device required.

Data can be displayed on the smartphone in real time.

Free Mobile App Support:

Real-time display of all parameter data
Data storage and history record review

Export data to Excel

These features make field monitoring more intuitive and data analysis more in-depth.

Lightweight and Portable, Easy to Use:

The device is compact, and the probe can be directly inserted into the soil to quickly obtain readings.

No professional training is required, making it suitable for agricultural production, research, irrigation, greenhouses, and other scenarios.

Application field



Agricultural irrigation



Greenhouse farming



Soil Quick Test



Meadow pastures



Flowers and vegetables

NBL-S-HS/It is used to quickly measure agricultural environmental parameters such as soil temperature and humidity, PH, salinity and electrical conductivity, which are displayed in real time on the display and the data is stored in the internal chip of the speed recorder. After measurement the data from the logger can be downloaded to the calculator via the included software for easy research or storage. Multi-purpose machine with soil temperature and humidity sensor, salt sensor, PH meter and other components

Widely used in meteorology, environmental protection, agriculture, forestry, hydrology, military, storage, scientific research and other fields.



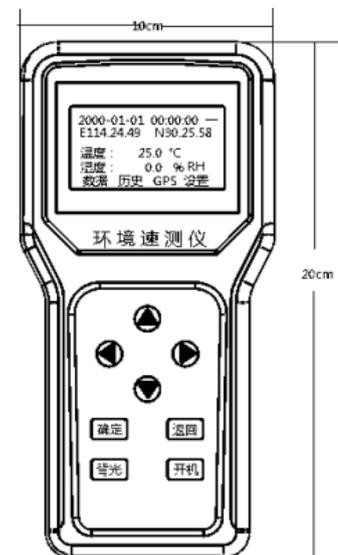
Performance characteristics

- | Easy to carry, the interface can be interchanged, does not affect the accuracy
- | Can automatically identify the sensor type, no need to manually set
- | Data storage function, can store up to 22528 pieces of data
- | The instrument has built-in GPS, with latitude and longitude positioning function

Technical parameter

	Measurement elements	Scope	Resolution	Accuracy
Environmental parameters	Soil temperature	-50-80℃	0.1℃	±0.5℃
	Soil moisture	0-100%	0.1%RH	±3%RH
	Soil salinity	0-8000mg/L	1mg/L	±50mg/L
	Soil conductivity	0-10mS/cm	0.01mS/cm	±5mS/cm
	Soil Ph	0-14PH	0.01PH	±0.02PH
	Power supply	Lithium-ion battery (4000mA.h)		
Communications	USB			
Storage	20,000 data			
Size	Mainframe: 100×200×28 mm			
	Whole machine: 405×100×100 mm			
Weight	About 0.5Kg			
Working environment	-20℃ ~ 80℃; 5%RH ~ 95%RH			

Product Size



Host computer software description

Double-click the included HandRTU_setup.exe program, select the installation language, confirm to start the automatic installation, click Next until it is completed

Instructions for use

There are 8 keys on the instrument: parameter plus (▲), parameter minus (▼) previous parameter (◀), next parameter (▶) confirm key, return key, backlight key, and power-on key. The backlight key and the power-on key can be used directly in any interface of the device.

Application field



Meteorological



Agriculture



Ocean



Environment



Science

Product application scenarios



**Provide accurate meteorological and agricultural sensors·
Promoting agricultural smart and precision meteorological
services for sustainable development.**



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