CDT-70B Soil 7 in 1 Sensor

For weather automation applications

Features

- High Sensitivity
- Fast response time
- Long service life
- Low consumption
- Good stability of output
- High temperature and high humidity environment for long-term use
- Can integrated temperature humidity air pressure at the same time

CDT-70B 7 in 1 soil sensors can generally measure soil temperature, humidity, conductivity, pH value, nitrogen, phosphorus and potassium content and other parameters at the same time. In this way, soil conditions can be comprehensively understood, and rich data support can be provided for agricultural production, soil scientific research, and environmental monitoring.

Typical installation locations

- Environmental protection
- Agriculture
- Livestock farm
- Greenhouse

Design structure

FDR soil moisture sensors use the reflection properties of electromagnetic waves in the soil to measure soil moisture. The sensor emits electromagnetic waves of a certain frequency, which travel through the soil and are reflected back.

Soil moisture will affect the reflection coefficient of electromagnetic wave. By measuring the change of reflection coefficient, soil moisture can be determined.

Easy installation

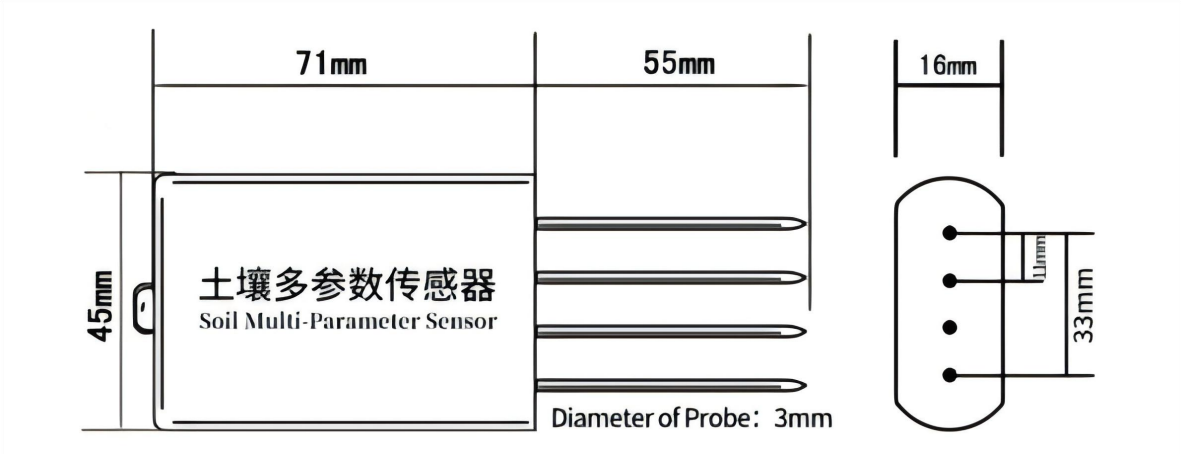
If a plug-in installation is used, you can use a drilling tool to drill holes in the selected position, the diameter of the hole should be slightly larger than the diameter of the sensor probe, so that the sensor can be inserted smoothly. The depth of the hole should be determined according to the design requirements and monitoring requirements of the sensor, and it is generally necessary to ensure that the probe of the sensor can be completely buried in the soil and is at the appropriate measurement depth. For example, for some soil temperature and humidity sensors, it may be necessary to drill the hole to a depth of 10-20 cm.

Reliable operation

High quality materials ensure the stability and durability of the sensor in a variety of soil environments. For example, the shell material of the sensor should have good water, dust and corrosion resistance, and can resist the erosion of moisture, chemicals and microorganisms in the soil. The probe material of the sensor should have good thermal and electrical conductivity, and can accurately measure the temperature and humidity of the soil.

Dimensions

CDT-70B connector dimension



Installing

Soil Surface measure method

1. Select a representative soil environment to clean up surface debris and vegetation

2. Insert the sensor vertically and completely into the soil

3. If there is a hard object, the measurement location should be replaced and re-measured

4. For accurate data, it is recommended to measure multiple
times and take the average

Buried measure method

1. Make a soil profile in the vertical direction, slightly deeper than the installation depth of the bottommost sensor, between 20cm and 50cm in diameter.

2. Insert the sensor horizontally into the soil profile

3. After the installation is completed, the excavated soil is back filled in order, layered and compacted, and horizontal installation is guaranteed.

4. If you have the conditions, you can put the removed soil in a bag and number it to keep the soil moisture unchanged, and backfill it in reverse order.

Technical data

Measurement performance, models CDT-70B

Item	Technical Specification				
	Moisture	Temperature	EC	PH	NPK
Range	0-100%（m^3/m^3）	-30℃-+70℃	0-10mS/cm 0-20mS/cm	3-10	0-1999mg/kg
Accuracy	±2%(0-50%) ±3%(51-100%)	±0.5℃	±3%FS	±0.5	±3%FS
Output Signal	RS485				
Response Time	<1s				
Supply	5VDC, 12-24VDC				
Effective measurement area	With the center of the probe diameter is 70mm, high 70mm cylinder				
Housing	ABS				
Dimensions	45*15*145mm(probe:3* Ø3*70mm)				
Operating Temperature	-40℃-+80℃				
Ingress Protection	IP68				
Storage	10-60℃@20%-90%RH				
Probe material	316L stainless steel				

Model number	Type	Output	Special features
CDW-33A	Atmospheric Temperature,Humidity & Pressure	RS485	Shelter installation
CDY-12A	Economical Tipping Bucket Rainfall	Pulses(@10kΩ&0.01uF),RS485	Diameter :φ200mm, height: 271mm
CDG-10B	Solar Radiation	0-5V,4-20mA,RS485	Spectral range:300～1100nm
CDT-11A	PH sensor	0-2V 0-5V 4-20mA RS485	Probe: Φ28*160mm
CDT-12A	DO sensor	RS485 4-20mA	Range 0-20mg/L(ppm)
CDT-12B	DO sensor(calibrable)	RS485 4-20mA	Range 0-20mg/L(ppm)
CDT-14A	ORP sensor	RS485 4-20mA	Range -1500mV-+1500mV
CDT-15A	Suspended Matter	RS485	Range 0-200mg/L,0-1000mg/L,0-5000mg/L
CDT-17B	Soil PH sensor	RS485 4-20mA	Probe material:304SS
CDT-19B	Turbidity (SS) sensor	RS485 4-20mA	Wavelength of falling radiation：860nm
CDT-21B	Solil EC_salinity	RS485 4-20mA	Probe material:316L
CDT-22B	Soil Moisture & Temperature	4-20mA ,0-5V,0-2V,RS485 optional	Probe material:316L
CDT-30B	Soil Moisture,Temperature & EC	RS485,0-2V	316L stainless steel
CDT-70B	Soil 7 in 1 Sensor	RS485	Soil Moisture,Temperature & EC & PH & NPK
CDT-1T2B	Seismic Detection Wave	0-20mV RS485	Natural Frequency(Hz):10±2.5%
CDT-1T3B	Soil layers temperature&moisture	RS485	Range 0-100℃ 0-70%
CDT-1T4B	TDS Sensor	RS485 4-20mA	Range 0-2000ppm
CDT-1T5B	Dissolved CO2 Sensor	RS485	Range 0-2000ppm
CDT-1T6B	Residual Chlorine	RS485	Range 2mg/L,8mg/L,20mg/L
CDT-N0C	Multi-parameter water quality Sensor	RS485	Multi-parameter integration

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