TDS500-22 Soil PH Sensor

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PH Sensor for measuring soil pH value should be a good solution with professional display instrument, calibration problems such as complicated, expensive and difficult to carry.The product can be for continuous online monitoring of soil and waste water PH.

FEATURES

- On-line & real-time measurement
- Solid dielectric and PTFE liquid junction, not easy jam, maintenance free
- High accuracy
- Simple operation and high reliability
- Fast response
- Strong in corrosion resistance

Parts:

1. Sensor with cable: 1
2. Filter(optional,when in soil): 1
3. Bracket(optional): 1

SPECIFICATIONS

Item	Technical Specification
Range	0-14PH
Supply	7-30V
Accuracy	±0. 02PH
Resolution	0.01PH
Response time	<10s
Stability	≤0.01PH/24h
Output Signal	4-20mA, RS485
Operating Temperature	0-+80℃
Ingress Protection	IP67
Storage	10-60℃@20%-90%RH
Dimension	Probe: Φ28*160mm Transmitting Module: 82*52*35mm

PH SCALE

PH value	Description	PH value	Description
<4.5	Strongly acidity	7.5-8.5	Faintly alkalinity
4.5-5.5	Acidity	8.5-9.5	Alkalinity
5.5-6.5	Faintly acidity	>9.5	Strongly alkalinity
6.5-7.5	Neutral		

ELECTRICAL CONNECTIONS

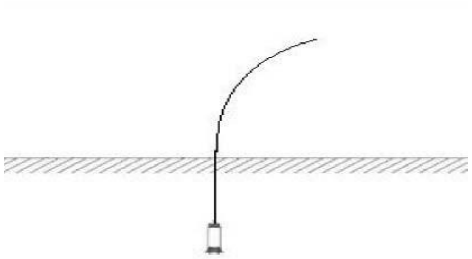
Connector（cable）	Current	RS485
Red(Pin1)	V+	V+
Blue(Pin4)	V-	V-
Yellow(Pin2)		RS485A
Green(Pin3)		RS485B
Black	Signal out	

Note: This product has been tested and complies with European CE requirements for EMC directive.

MOUNTING

The sensor probe has a protective cover to protect the probe. When using, remove the protective cover. Do not insert the probe directly into the soil to avoid irreparable damage to the probe.

Excavate the soil to be tested, place the sensor vertically into the soil, and then fill the soil;



The probe of the sensor must be covered by soil !

Note: The PH electrode cannot be placed in the air for a long time.When leaving the soil to be tested, soak in 3mol / l of kcl solution or protective solution

OUTPUT CHARACTERISTICS

- **Current**

PH=(I-4)/16*14, (where I = output current(mA))

- **Voltage**

PH=V/V_full scale*14, (where V= output voltage(V),V_full scale= 5V)

- **RS485**

If the transmission distance is over 100m, please add a 120Ω terminal matching resistances on the front end and back end of bus interface respectively.Attach communication protocol.

Communication Protocol（MODBUS）

Transmission mode: MODBUS-RTU,**Baud rate:** 9600bps,**Data bits:**8,**Stop bit:**1,**Check bit:**no

Slave address:the factory default is 03H (set according to the need,01H to F7H)

- **The 03H Function Code Example: Read The PH Value(Data type is floating point)**

Host Scan Order(slave address:0x03)

03 03 00 00 00 06 C42A

Slave Response

03 03 0C 40 E0 51 EC C0 89 99 9A 41 C9 47 AE AECE

PH: 40E051EC >>7.01

Temperature: 41C947AE>>25.16

- **The 06H Function Code Example: Modify the slave address**

Host Scan Order (Changed the 03H to 01H):

03 06 00 14 00 01 09EC

Slave Response:

03 06 00 14 00 01 09EC

WARRANTY

This product is warranted to be free of defects in materials and construction for a period of 12 months from date of lead time.

Liability is limited to repair or replacement of defective item.

CE Complies with applicable CE directives.

Manual subject to change without notice. Version 2.0