

USER GUIDE FOR CDT-11A PH SENSOR

CDT-11A-01-MN-10

SEP-2024

This document is applied for the following products

SKU	CDT	HW Ver.	1.0	FW Ver.	1.0
Item Code	CDT-11A	PH Sensor, 4-20mA RS485 0-5V 0-2V Output, ABS, 0-14 ±0.3PH			

1. Introductions

The soil contains many substances such as organic acid, inorganic acid, alkali and salt, due to the different content of various substances, so the soil shows different PH value. Usually the PH in the range of 6.5-7.5 soil is called the neutral soil. CDT-11A PH sensors measure the pH value should be a good solution without professional calibration instruments, complex operation, expensive and difficult to carry, can be for continuous measurement of soil, waste water pH value, suitable for agriculture, sewage treatment plant, chemical industry, printing and dyeing, paper making, pharmacy, electroplating and environmental protection and other fields.

2. Specification

Item	Technical Specification
Range	0-14PH
Supply	5VDC,12-24VDC
Accuracy	±0.3PH
Resolution	0.01PH
Response time	<10s(in water)
Stability	≤0.02PH/24h
Output Signal	4-20mA,0-5V,0-2V,RS485
Operating Temperature	0-+80℃
Ingress Protection(Probe)	IP68
Storage	10-60℃@20%-90%RH
Dimension	Probe: Φ28*160mm Transmitting Module: Φ29*100mm
Item	Technical Specification
Range	0-14PH
Supply	5VDC,12-24VDC
Accuracy	±0.3PH
Resolution	0.01PH
Response time	<10s(in water)
Stability	≤0.02PH/24h

3. Working Process

Glass electrode: This is a key part of PH sensors and is usually made of glass film. The glass film is selectively responsive to hydrogen ions and is charged both internally and externally. When the glass electrode is immersed in the solution to be tested, the hydrogen ions in the solution will react with the charged groups on the surface of the glass film, causing a change in charge, and then generate an electric potential difference between the glass electrode and the reference electrode.



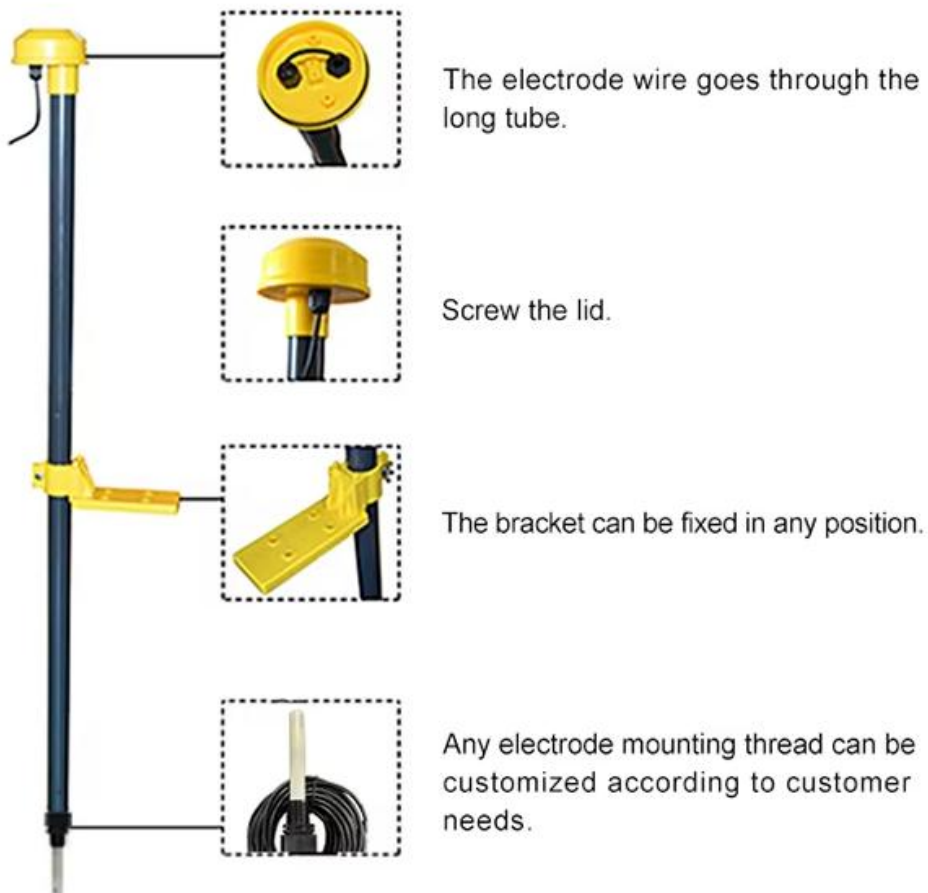
4. Electrical Connections

Connector (cable)	Current/ Voltage	RS485
Red	V+	V+
Black	V-	V-
Yellow	Signal out	RS485A
Green	/	RS485B
Connector (cable)	Current/ Voltage	RS485

5. Dimensions



6. Installation



7. 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 01H (set according to the need, 00H to FFH)

7.1 The 03H Function Code Example: Read The PH Value

Host Scan Order(slave address:0x03)

01 03 00 00 00 01 84 0A

Slave Response

01 03 02 02 AE 3898

PH: $02AE = 686(D) * 0.01 = 6.86$

7.2 The 06H Function Code Example: Modify the slave address

Host Scan Order (Changed the 01H to 02H):

01 06 00 30 00 02 00804

Slave Response:

01 06 00 30 00 02 00804

Note:

1. All underlined is fixed bit;
2. The last two bytes is CRC check command.

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



Pure Water Glass Electrode

Suitable for pure water

Temperature range of water medium: 0-100



High Temperature Glass Electrode

Suitable for boiler water, hot liquid

Temperature range of water medium: 0-130



Teflon Electrode

Suitable for Corrosion resistance, industrial wastewater



Desulfurization Electrode

Limewater, desulfurization, viscous liquid, slurry and other environments



Antimony Electrode

Suitable for containing hydrofluoric acid and oilfield sewage

8. Troubleshooting

If some error occurs, such as no output or unreliable. Please disconnect the sensor first, then check if the sensor installation and connection is correct with the instruction manual.

If still not successful, please contact our company.

9. Support contacts:



Complies with applicable CE directives.

Manual subject to change without notice. Version 1.0

Copyright © 2015 Hunan Coda Electronic Tech Co.,Ltd

Hunan Coda Electronic Tech Co.,Ltd

T:+86-0731-85117089

W:www.codasensor.com

E:Molly@codasensor.com