Datasheet

pH Digital Electrode

AI-PH801

Arka Instruments LLP

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The pH digital sensor designed for the aquaculture industry is equipped with numbers interface (RS485*1), can be used for measuring aqueous solution system within the range change in pH/ORP. The pH sensor is applied in different fields: Aquaculture, water quality testing, information data collection, Internet of Things water quality testing.

Applications

- Aquaculture
- water quality testing
- information data collection
- Internet of Things water quality testing

pH Digital Electrode

Features

- The electrode is easy to use, no need to replenish electrolyte, and has good waterproof performance.
- The electrode has fast response time, good stability and strong anti-interference ability.
- The electrode is not easy to be polluted and blocked, and has a long service life.
- Strengthen the reference system to cope with complex working conditions.

Principle

The pH high - temperature electrode mainly consists of a pH - sensitive membrane, a reference electrode, an internal reference solution, an electrode rod and wires.
When the electrode is immersed in the solution, the pH - sensitive membrane exchanges ions with hydrogen ions in the solution. A potential difference related to the hydrogen - ion activity is formed between the membrane and the solution. The reference electrode provides a stable potential.

According to the Nernst equation ($E = E^0 + \frac{2.303RT}{nF}\log a_{H^+}$), the measured potential difference () is related to the hydrogen - ion activity (E). By measuring this potential difference, the pH value of the solution can be calculated.

Parameters	
Measurement range	(0~14) pH, ±1000.0mV
Temperature	(0~60) ℃
Resolution	0.01pH,0.1mV
Accuracy	0.02pH, 0.5℃, 0.2mV
Output	RS485
Communication	Modbus-RTU
Power supply	12VDC

Maintanance

(1) An appropriate amount of 3.3 mol/LKCL solution is contained in the protective cover at the front part of the sensor, in which the sensor head is immersed so as to maintain the activation of the sensitive membrane and the liquid junction.

(2) When the sensor is used, the front transparent protective cover needs to be removed, and the glass bubble and the liquid junction be immersed in the solution for use.

(3) Before installation, make sure to use thread seal tape (at 3/4 threads) for waterproofing and sealing to avoid water into the pH sensor, resulting in short circuit of the pH sensor cable.

(4) When measuring, it shall be washed in distilled water (or deionized water) and dried with filter paper to prevent impurities from entering the measured liquid. The sensor sensitive membrane and the liquid junction shall be completely immersed in the measured liquid.

(5) Check whether the connecting terminal is dry. If there is contamination, please wipe it with anhydrous alcohol and blow dry it for use.

(6) It is suggested that users clean the sensitive membrane and liquid junction in front of the sensor periodically and coordinate with the instrument correction regularly.

(7) When the sensor is not used, it shall be washed and inserted into the protective cover with saturated KCl solution.

Calibration

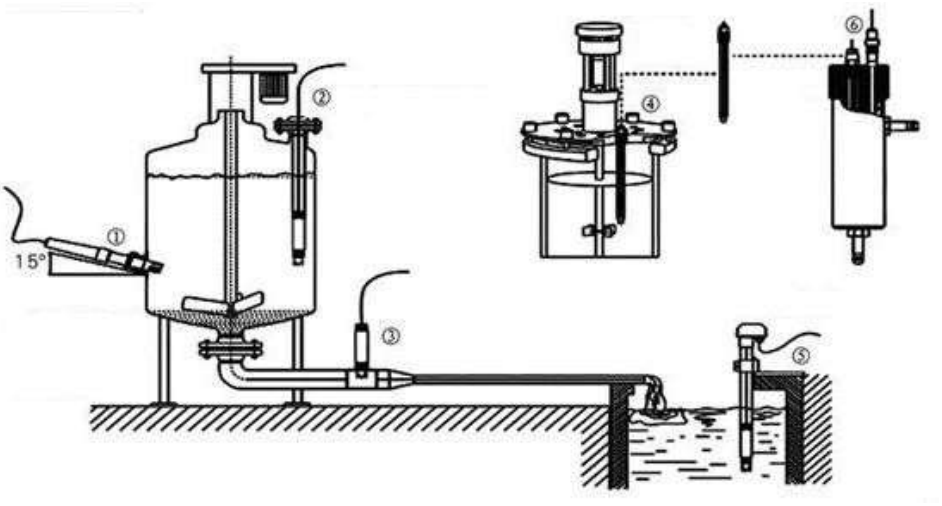
(1) It is recommended to calibrate the sensor by three-point method. The pH 4.00 buffer solution is usually used for positioning first, then the pH 6.86 and pH 9.18 buffer solutions are used sequentially to determine the slope,calibration points are selectable in the meter.

(2) After the sensor is connected to the instrument, please connect the instrument to the power supply to preheat it for 30 minutes before performing the calibration.

(3) When performing the calibration of calibration sensor, it shall be noted that the sensor can not be placed flat, but shall be placed vertically (please put the sensor sensitive membrane downward) to prevent deviation of the sensor mV data.

(4) For sensors with temperature compensation, switch the controller to automatic temperature compensation.

Installation



Schematic diagram of common installation method

① Side wall installation

② Flange mounted at the top

③ Pipe installation

④ Top installation

⑤ Submersible installation

⑥ Flow-through installation

The interface must be in 5 oblique angle,or it will affect the normal test and use of the electrode.We won't be responsible for any results due to this.

Ordering Code

AI-PH801 -ZY-A-0-A-B-05-GA								Description
AI-PH801	-	-	-	-	-	-	-	
Electrode Connnector	ZY							Cable Connector
Salt Bridge Type		A						Single Point Ceramic Diaphragm
Temperature Compensation Type			0					No
			2					NTC 22K
Output				A				RS485
Power Supply					B			12VDC
Cable Length						05		5m
						10		10m
						15		15m
						20		20m
						30		30m
						XX		Others
Housing Material and Thread Type							GA	Engineering Plastic, G3/4 Thread
							RK	Engineering Plastic, Unthreaded
							XX	Others

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