



# RK500-12 pH Sensor



## Overview

RK500-12 pH sensor is a good solution to measure the pH value. It does not require a professional calibration instrument and is simple to operate. It can be used to continuously measure the pH value of wastewater. It is suitable for agriculture, sewage treatment plants, chemical industry, printing and dyeing, papermaking, pharmaceuticals, electroplating and environmental protection.

## Features

- Low impedance sensitive glass film
- Temperature compensation for thermal stability
- Not easily hydrolyzed, eliminating alkali errors
- Simple operation and high reliability
- Internal signal isolation, strong anti-interference
- Widely power supply(7-28VDC)
- Low drift, small size, fast response speed
- Stable performance and long service life
- Easy electrode replacement

## Applications

- Environmental protection
- Agriculture
- Aquaculture
- Water conservancy
- Sewage treatment
- Industrial wastewater treatment

## Quick Selection Guide

Type	Details	Application
A1	Small immersion type,direct cable	Conventional water, sewage, nutrient solution, etc
A2	Small immersion type,direct cable	Industrial water, seawater, environmental protection, etc
B1	PG13.5 thread installation,waterproof connector	Conventional water, sewage, nutrient solution, etc
B2	PG13.5 thread installation,waterproof connector	Industrial water, seawater, environmental protection, etc
B3	PG13.5 thread installation,waterproof connector	High temperature environment(>80°C)
C1	Upper: NPT3/4 thread,lower: NPT3/4 thread,direct cable	Conventional water, river water, etc
C2	Upper: NPT3/4 thread,lower: NPT3/4 thread,direct cable	Industrial water, seawater, environmental protection, etc
C3	Upper: NPT3/4 thread,lower: NPT3/4 thread,direct cable	High temperature environment(>80°C)
D1	Upper: NPT3/4 thread,lower: NPT3/4 thread,waterproof connector	Conventional water, river water, etc
D2	Upper: NPT3/4 thread,lower: NPT3/4 thread,waterproof connector	Industrial water, seawater, environmental protection, etc
D3	Upper: NPT3/4 thread,lower: NPT3/4 thread,waterproof connector	High temperature environment(>80°C)

## Technical Parameter



Type	A1	A2	B1	B2	B3
Material	PC+ABS	Glass+PC+ABS	PC+ABS	Glass+ABS	Glass+316L
Operation temperature	0-60°C	0-80°C	0-60°C	0-80°C	0-100°C
Working pressure	0.6Mpa	0.8Mpa	0.6Mpa	1Mpa	1Mpa
Thread	/	/	PG13.5	PG13.5	PG13.5
Electrical connection	Direct cable	Direct cable	M8 waterproof connector	M8 waterproof connector	M8 waterproof connector
Application	Conventional water, sewage, nutrient solution, etc	Industrial water, seawater, environmental protection, etc	Conventional water, sewage, nutrient solution, etc	Industrial water, seawater, environmental protection, etc	High temperature occasions, etc
Range	0-14pH				
Resolution	0.01pH				
Accuracy	0.01pH				
Response time	10 seconds (98% flowing liquid)				
Temperature compensation	Thermal resistance				
Power supply	7-28VDC(< 0.15W)				
Output	RS485 & 4-20mA				
Dimensions	Φ12.0 x 170.0				
Ingress protection	IP68				

## Technical Parameter



Type	C1	C2	C3	D1	D2	D3
Material	Glass+PC+ABS	Glass+PC+ABS	Glass+PPS	Glass+PC+ABS	Glass+PC+ABS	Glass+PPS
Operation temperature	0-60°C	0-80°C	0-100°C	0-60°C	0-80°C	0-100°C
Working pressure	0.6Mpa	1Mpa	1Mpa	0.6Mpa	1Mpa	1Mpa
Response time	10 seconds (98% flowing liquid)				8 seconds (98% flowing liquid)	
Electrical connection	Direct cable			M16 waterproof connector		
Application	Conventional water, river water, etc	Industrial water, seawater, environmental protection, etc	High temperature occasions, etc	Conventional water, river water, etc	Industrial water, seawater, environmental protection, etc	High temperature occasions, etc
Thread	Upper: NPT3/4 thread, Lower: NPT3/4 thread					
Range	0-14pH					
Resolution	0.01pH					
Accuracy	0.01pH					
Temperature compensation	Thermal resistance					
Power supply	7-28VDC(< 0.15W)					
Output	RS485 & 4-20mA					
Dimensions	Φ31.0 x 180.0					
Ingress protection	IP68					

## 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		

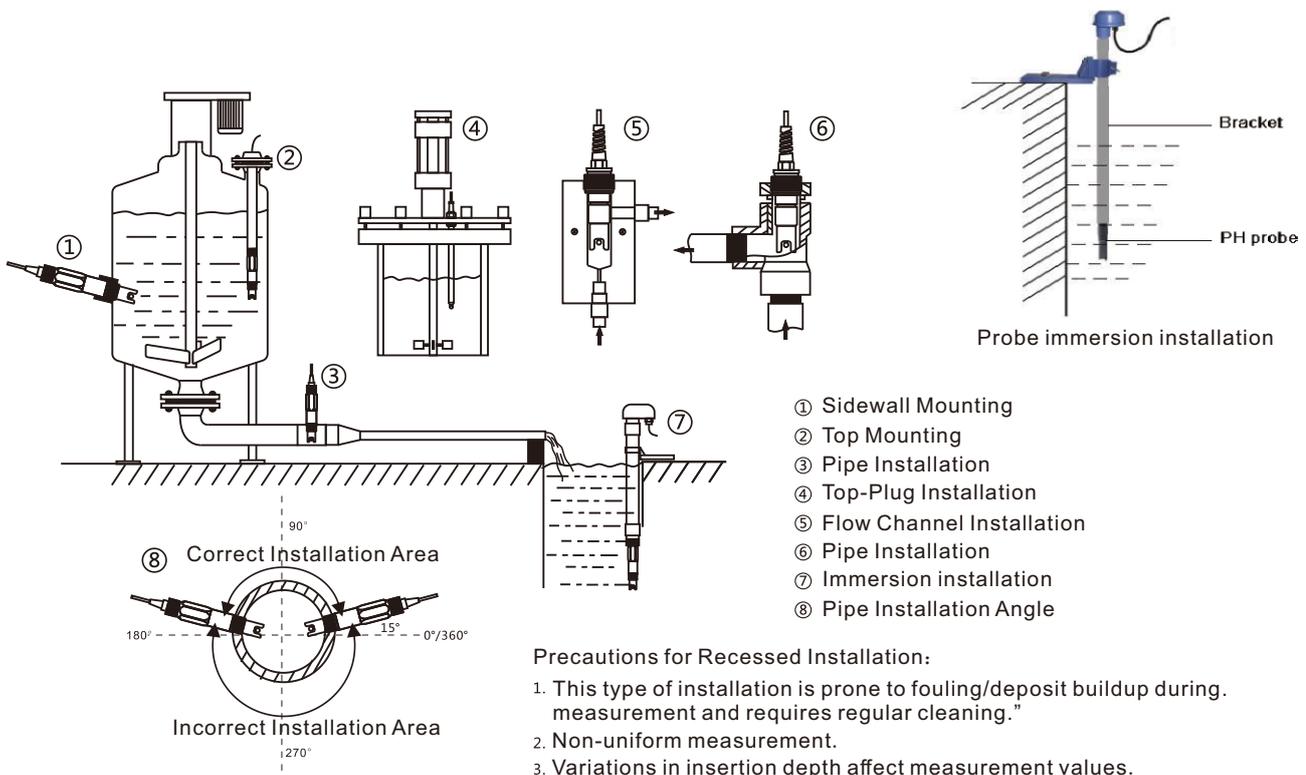
## Electrode Maintenance

When the probe is not in use, it can be soaked in 3mol/l KCL solution or saturated KCL solution. It is strictly prohibited to immerse the electrode in distilled water, deionized water, or tap water with very low ion content. If the pH electrode is contaminated with inorganic substances, it can be cleaned with 0.1mol/l HCl or sodium hydroxide solution for a few minutes, and then rinsed with distilled water. If the pH electrode is contaminated with organic matter, it can be cleaned with alcohol or acetone, and then rinsed with distilled water. (Note: When using, remove the protective cap in front of the electrode)

According to the work environment, clean the electrodes with tap water every 3 or 6 months.

## Installation & Fixed

Installation bracket (length=1m) NPT3/4 installation thread is optional



### Precautions for Recessed Installation:

1. This type of installation is prone to fouling/deposit buildup during measurement and requires regular cleaning."
2. Non-uniform measurement.
3. Variations in insertion depth affect measurement values.
4. The probe position must remain above sediment level.

## Accessories & Sheath

M8 waterproof connector for B1,B2,B3



M8 female 5 pin

M16 waterproof connector for D1,D2,D3



M16 female 5 pin



N34

Internal thread: PG13.5  
External thread: NPT3/4



G34

Internal thread: PG13.5  
External thread: G3/4



K50

Internal thread: PG13.5  
50.5 chuck installation

Sheath(316L) for B1,B2,B3(Optional)

## Parameter Selection Table

Remark	Series	Type	Supply	Cable Length	Sheath	Accessory
RK	500-12	A1 ... D3 X	A X	5000 10000 X	A B C N	Models A1to D3 are available for selection Other 7-28VDC Other Cable length 5 m Cable length 10m Other N34 G34 K50 No protective sheath With mounting bracket Without mounting bracket

Example: RK500-12C2A5000NN Type C2,Supply:7-28V,Cable length:5m. No protective sheath, Without mounting bracket

Revision time	Reviser	Current Version	Remarks
20250430	Lee	V5.0	