



pH Electrode

# Datasheet

## pH electrode/ORP electrode

pH and ORP combination electrodes

### Product description

Supmea pH electrode is a high-quality sensor for the analysis and measurement of liquid components during industrial automation. These electrodes are known for their use of top-quality materials and components. They are designed as combined electrodes (the measuring electrode and the reference electrode are combined in one shaft). The temperature probe can also be integrated as an option.



### According to different environments to provide electrodes to meet the requirements

- For industrial wastewater engineering measurements
- For high-alkaline liquid measurements
- For high acidic liquid measurements
- For high-temperature sterilization processes measurements
- For desulfurization process liquid analysis
- For measurements in low-ion media

## Type of pH electrode

Electrode model	Designation	pH and ORP range	Temperature range
pH5014	Industrial sewage electrode	0-14pH	0-60°C
pH5031	Glass pH electrode	0-14pH	0-90°C
pH5033	High Temperature Glass pH probe	0-14pH	0-130°C
pH6020	Germany pH electrode	0-14pH	-5-80°C
pH5013A	PTFE pH electrode	0-14pH	0-90°C
pH5030	Desulfurization pH electrode	0-14pH	0-60°C
pH2630	Biological fermentation	0-14pH	0-130°C
pH4430	Special electrode for thermal power plant	0-14pH	0-130°C
pH4850	Digital Online pH Electrode	0-14pH	0-50°C
ORP5014	Industrial ORP electrode	±2000mV	0-60°C
ORP5031	Glass ORP electrode	±2000mV	0-60°C

## Features of pH electrode

1. Adopt international advanced solid dielectric and large area PTFE liquid junction, easy maintenance.
2. Long distance reference diffusion path, extends electrode life greatly in harsh environments.
3. Electrode is made of high quality low-noise cable, make signal output length greater than 40 meters or more, without interference.
4. No supplemental dielectric, a little maintenance.
5. High accuracy, fast response, good repeat-ability.
6. With silver ions Ag / Ag-Cl reference electrode.
7. Proper operation to extend service life
8. Side or vertically installation to the reaction tank or pipe.
9. Electrode can be used interchangeably with similar electrodes.

**pH5014**

**Industrial sewage electrode**

Technical parameters

Measure range:  
0-14pH

Temperature range:  
0-60°C

Temperature compensation:  
NTC10K(standard)/PT1000/PT100

Pressure resistant:  
0.6MPa

Material:  
PPS/PC/PTFE

Cable length:  
5m/10m/15m

Tread type:  
3/4NPT

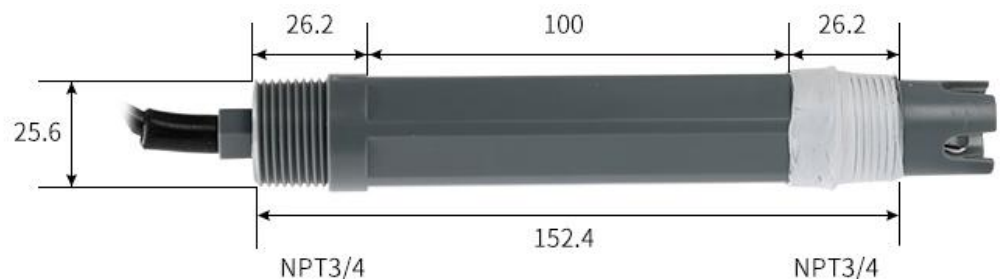


Application

Recommended application:  
Drinking water monitoring and treatment  
Swimming pools  
Aquariums( also marine aquariums)  
Lightly polluted service water  
Process water and wastewater  
Rainwater,pond water and surface water

Not recommended:  
≥60°C  
Strong acid and alkaline  
Contains organic, heavy metal ions  
Biotechnology, sterilization process

Product size



**pH5031**

**Glass pH electrode**

---

Technical parameters

Measure range:  
0-14pH

Temperature range:  
0-80°C

Temperature compensation:  
NTC10K(standard)/PT1000/PT100

Pressure resistant:  
0.6MPa

Material:  
Glass

Cable length:  
5m/10m/15m

Tread type:  
PG13.5



---

Application

Recommended Application:  
Drinking water monitoring and treatment  
Swimming pools

Lightly polluted service water  
Process water and wastewater  
Rainwater,pond water and surface water

Not recommended:  
≥80°C  
Biotechnology, sterilization process

---

## pH5033

## High Temperature Glass pH electrode

---

### Technical parameters

Measure range:

0-14pH

Temperature range:

0-130°C

Temperature compensation:

NTC10K(standard)/PT1000/PT100

Pressure resistant:

0.6MPa

Material:

Glass

Cable length:

5m/10m/15m

Tread type:

PG13.5



---

### Application

Recommended Application:

Drinking water monitoring and treatment

Swimming pools

Lightly polluted service water

Process water and wastewater

Rainwater, pond water and surface water

Not recommended:

$\geq 130^{\circ}\text{C}$

Biotechnology, sterilization process

---

## pH6020

## Germany pH electrode

---

### Technical parameters

Measure range:  
0-12pH

Temperature range:  
-5-80°C

Temperature compensation:  
No

Pressure resistant:  
0.6MPa

Material:  
Glass

Cable length:  
5m/10m/15m

Tread type:  
PG13.5



---

### Application

#### Recommended Application:

For industrial and communal water and wastewater engineering  
For measurements in suspensions and varnishes  
For measurements in low-ion media  
For high-alkaline, high-temperature and sterilization processes  
For media containing fluorides and low-temperature applications  
PRO version for the toughest operating condition

#### Not recommended:

≥80°C  
Strong acid and alkaline  
Biotechnology, sterilization process

---

**pH5013A**

**PTFE pH electrode**

---

Technical parameters

Measure range:  
0-14pH

Temperature range:  
0-90°C

Temperature compensation:  
NTC10K(standard),PT1000

Pressure resistant:  
0.6MPa

Material:  
PTFE

Cable length:  
5m/10m/15m

Tread type:  
3/4NPT



---

Application

Recommended application:  
Strong acid and alkaline  
Lightly polluted service water  
Process water and waste water  
Rainwater,pond water and surface water

Not recommended:  
≥60°C  
Contains organic, heavy metal ions  
Biotechnology, sterilization process

---



**pH5030****Desulfurization pH electrode**

---

## Technical parameters

Measure range:  
0-14pH

Temperature range:  
0-60°C

Temperature compensation:  
NTC10K(standard),PT1000

Pressure resistant:  
0.6MPa

Material:  
PC

Cable length:  
5m/10m/15m

Tread type:  
3/4NPT



## Application

Recommended application:  
Drinking water monitoring and treatment  
Swimming pools  
Aquariums( also marine aquariums)  
Lightly polluted service water  
Process water and waste water  
Rainwater,pond water and surface water

Not recommended:  
≥60°C  
Strong acid and alkaline  
Biotechnology, sterilization process

---

**pH4850****pH Digital Online Electrode**

---

## Technical parameters

Measure range:  
0-14pH

Temperature range:  
0-50°C

Temperature compensation:  
NTC10K(standard),PT1000

Pressure resistant:  
0.6MPa

Material:  
PPS/PC

Cable length:  
5m/10m/15m

Tread type:  
3/4NPT



## Application

Recommended Application:  
Drinking water monitoring and treatment  
Swimming pools  
Aquariums( also marine aquariums)  
Lightly polluted service water  
Process water and waste water  
Rainwater,pond water and surface water

Not recommended:  
≥60°C  
Strong acid and alkaline  
Biotechnology, sterilization process

---

## ORP5014

## Industrial ORP electrode

---

### Technical parameters

Measure range:  
-2000mV~+2000mA

Temperature range:  
0-60°C

Temperature compensation:  
NTC10K(standard)

Pressure resistant:  
0.3MPa

Material:  
PPS/PC/PTFE

Cable length:  
5m/10m/15m

Tread type:  
3/4NPT



---

### Application

Recommended application:  
Drinking water monitoring and treatment  
Swimming pools  
Aquariums( also marine aquariums)  
Lightly polluted service water  
Process water and wastewater  
Rainwater,pond water and surface water

Not recommended:  
≥60°C  
Strong acid and alkaline  
Contains organic, heavy metal ions  
Biotechnology, sterilization process

---

## ORP5031

## Glass ORP electrode

---

### Technical parameters

Measure range:  
-2000mV~+2000mA

Temperature range:  
0-80°C

Temperature compensation:  
NTC10K(standard)/PT1000/PT100

Pressure resistant:  
0.6MPa

Material:  
Glass

Cable length:  
5m/10m/15m

Tread type:  
PG13.5



---

### Application

Recommended Application:  
Drinking water monitoring and treatment  
Swimming pools

Lightly polluted service water  
Process water and wastewater  
Rainwater,pond water and surface water

Not recommended:  
≥80°C  
Biotechnology, sterilization process

---

## Electrode sheath

---



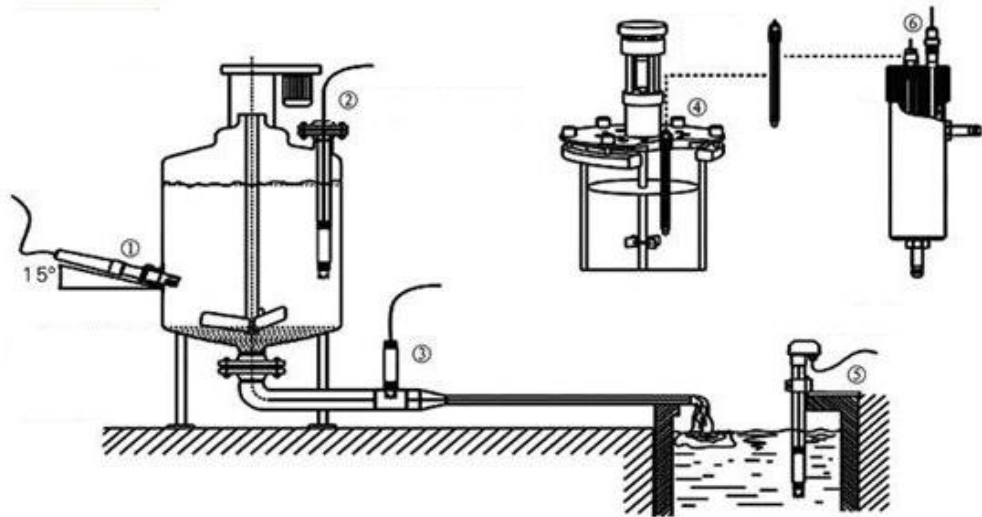
PTFE pH sheath



Stainless steel pH sheath

## Installation of electrode

---



Schematic diagram of common installation method

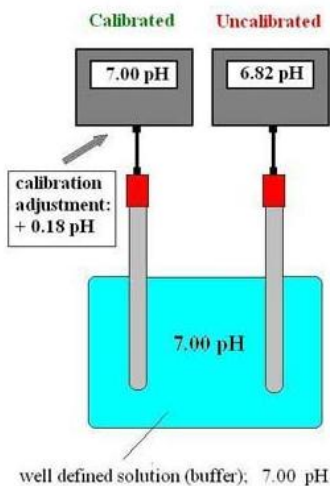
- ① Side wall installation    ② Flange mounted at the top    ③ Pipe installation  
④ Top installation    ⑤ Submersible installation    ⑥ Flow-through installation

The interface must be in 15° 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.

## pH Calibration

A pH calibration is the procedure of adjusting the pH meter by measuring solutions of known pH values.

### Why you need to calibrate:



The characteristic of a pH electrode will change with time due to electrode coating and aging. And even a pH electrode would be stable over time, pH electrodes cannot be produced with identical characteristics.

In practice the response of a real pH sensor does not exactly follow the Nernst equation. This difference between the theoretical and actual behavior of a pH electrode must be compensated for. A calibration is required to match the pH meter to the current characteristics of the used pH sensor.

### Multi-point calibration

To achieve the best possible accuracy, the calibration should cover the range of the desired measurement values. If the readings go beyond the calibrated range, the pH meter assumes linearity and simply extrapolates the value to be displayed. The true value may be slightly different.

More advanced pH meters will let the user calibrate at three, four or five and even higher numbers of pH values. A multi-point calibration mean, in comparison to a two-point calibration, that you can calibrate your pH tester on both sides of the zero point (pH 7.00). This will expand your pH measurement range without the need of recalibrating.

Example) Three-point calibration at pH 4.00 , 7.0 and 9.21.

