# MDPHS10 Industrial Sewage PH Sensor

## Basic Principle of pH Electrode

In PH measurement, the used electrode is also known as the primary battery. The primary battery is a system, whose role is to transfer chemical energy into electrical energy. The voltage of the battery is called the electromotive force (EMF). This electromotive force (EMF) is composed of two half-batteries. One half-battery is called the measuring electrode, and its potential is related to the specificaion activity; the other half-battery is the reference battery, often called the reference electrode, which is generally interlinked with the measurement solution, and connected to the measuring instrument.

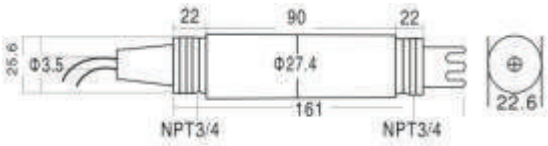
## Model No.: MDPHS10

- Measuring range: 0-14pH
- Temperature range: 0-60℃
- Compressive strength:0.6MPa
- Material: PPS/PC
- Slope: ≥96％
- Zero point potential: $E_0$=7PH±0.3
- Installation size: Upper and Lower 3/4”NPT Pipe Thread
- Connection: Low-noise cable goes out directly.
- Application: Applicable to various industrial sewages, environmental protection and water treatment.

## Features of PH electrode

- It adopts the world-class solid dielectric and a large area of PTFE liquid for junction, non-block and easy maintenance.
- Long-distance reference diffusion channel greatly extends the service life of electrodes in the harsh environment
- It adopts PPS/PC casing and the upper and lower 3/4”NPT pipe thread, so it is easy for installation and there is no need of the jacket, thus saving the installation cost.
- The electrode adopts the high-quality low-noise cable, which makes the signal output length more than 20 meters free of interference.
- There is no need for additional dielectric and there is a little amount of maintenance.
- High measurement accuracy, fast responsing and good repeatability.
- Reference electrode with silver ions Ag/AgCL
- Proper operation shall make service life longer.
- It can be installed in the reaction tank or pipe laterally or vertically.
- The electrode can be replaced by a similar electrode made by any other

**Electrode Structure Chart**




**Electrode Wiring Plug**

BNC (Q9) Plug Pin Y Plate

# MDPHS20 Industrial Composite Sewage PH Sensor

## Basic Principle of pH Electrode

In PH measurement, the used electrode is also known as the primary battery. The primary battery is a system, whose role is to transfer chemical energy into electrical energy. The voltage of the battery is called the electromotive force (EMF). This electromotive force (EMF) is composed of two half-batteries. One half-battery is called the measuring electrode, and its potential is related to the specific ion activity; the other half-battery is the reference battery, often called the reference electrode, which is generally interlinked with the measurement solution, and connected to the measuring instrument.

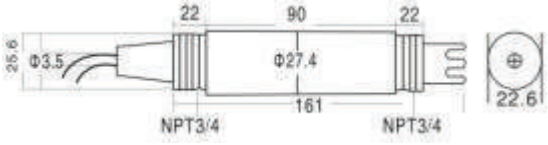
## Model No.: MDPHS20

- Measuring range: 0-14pH
- Temperature range:0-60℃
- Compressive strength:0.6MPa
- Slope: ≥96％
- Zero point potential: $E_0$=7PH±0.3
- Internal impedance: 150-250 MΩ (25℃)
- Profile: 3-in-1Electrode (Integrating the temperature compensation and the solution grounding)
- Installation size: Upper and Lower 3/4”NPT Pipe Thread
- Connection: Low-noise cable goes out directly.
- Application: Applicable to various industrial sewages, environmental protection and water treatment.

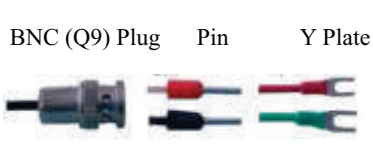
## Features of PH Electrode

- It adopts the world-class solid dielectric and a large area of PTFE liquid for junction, non-block and easy maintenance.
- Long-distance reference diffusion channel greatly extends the service life of electrodes in the harsh environment
- It adopts PPS/PC casing and the upper and lower 3/4” NPT pipe thread, so it is easy for installation and there is no need of the jacket, thus saving the installation cost.
- The electrode adopts the high-quality low-noise cable, which makes the signal output length more than 20 meters free of interference.
- There is no need for additional dielectric and there is a little amount of maintenance.
- High measurement accuracy, fast responsing and good repeatability.
- Reference electrode with silver ions Ag/AgCL
- Proper operation shall make service life longer.
- It can be installed in the reaction tank or pipe laterally or vertically.
- The electrode can be replaced by a similar electrode made by any other

**Electrode Structure Chart**




**Electrode Wiring Plug**



# MDPHS30 Industrial Pure Water PH Sensor

## Basic Principle of pH Electrode

- The polymer filling makes the reference junction potential very stable.
- The diffusion potential is very stable; large-area diaphragm surrounds the glass diaphragm bubbles, so that the distance from the reference diaphragm to the glass diaphragm is near and constant; the ions diffused from diaphragm and the glass electrode quickly form a complete measurement circuit to respond quickly, so that the diffusion potential is not easy to be affected by the outside flow rate and is thus very stable!
- As the diaphragm adopts the polymer filling and there is small and stable amount of overflowing electrolyte, it shall not pollute the measured pure water.
  Therefore, the above-mentioned features of the composite electrode make it ideal for measuring PH value of high-purity water!

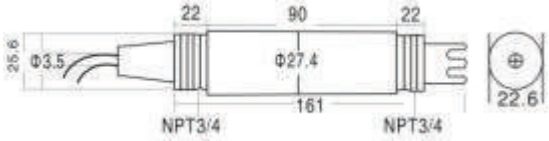
## Model No.: MDPHS30

- Measuring range: 0-14pH
- Temperature range: 0-60℃
- Compressive strength:0.6MPa
- Material: PPS/PC
- Slope: ≥96％
- Zero point potential: $E_0$=7PH±0.3
- Internal impedance: ≤250 MΩ (25℃)
- Installation size: Upper and Lower 3/4”NPT Pipe Thread
- Connection: Low-noise cable goes out directly.
- Application: Measurement of all kinds of pure water and high-purity water.

## Features of PH Electrode

- It adopts the world-class solid dielectric and a large area of PCE liquid for junction, difficult to block and convenient maintenance.
- Long-distance reference diffusion channel greatly extends the service life of electrodes in the harsh environment.
- It adopts PPS/PC casing and the upper and lower 3/4”NPT pipe thread, so it is easy for installation and there is no need of the jacket, thus saving the installation cost.
- The electrode adopts the high-quality low-noise cable, which makes the signal output length more than 40 meters free of interference.
- There is no need for additional dielectric and there is a little amount of maintenance.
- High measurement accuracy, fast echoing and good repeatability.
- Reference electrode with silver ions Ag/AgCL
- Proper operation shall make service life longer.
- It can be installed in the reaction tank or pipe laterally or vertically.
- The electrode can be replaced by a similar electrode made by any other

### Electrode Structure Chart




### Electrode Wiring Plug

BNC (Q9) Plug Pin Y Plate

## Application field:

Medicine, chlor-alkali chemicals, dyes pigments, pulp and paper, intermediates, fertilizers, starch, water and environmental protection industries, high purity water measurement.

# MDPHS40 Industrial Pure Water PH Sensor

## Basic Principle of pH Electrode

- The polymer filling makes the reference junction potential very stable.
- The diffusion potential is very stable; large-area diaphragm surrounds the glass diaphragm bubbles, so that the distance from the reference diaphragm to the glass diaphragm is near and constant; the ions diffused from diaphragm and the glass electrode quickly form a complete measurement circuit to respond quickly, so that the diffusion potential is not easy to be affected by the outside flow rate and is thus very stable!
- As the diaphragm adopts the polymer filling and there is small and stable amount of overflowing electrolyte, it shall not pollute the measured pure water.
- Therefore, the above-mentioned features of the composite electrode make it ideal for measuring PH value of high-purity water!

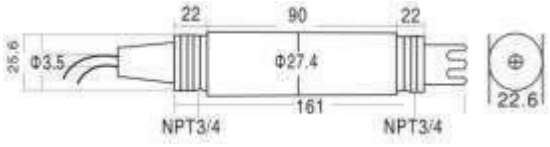
## Model No.: MDPHS40

- Measuring range: 0-14pH
- Temperature range:0-60℃
- Compressive strength:0.6MPa
- Slope: ≥96％
- Zero point potential: $E_0$=7PH±0.3
- Internal impedance: ≤250 MΩ (25℃)
- Profile: 3-in-1Electrode (Integrating the temperature compensation and the solution grounding)
- Installation size: Upper and Lower 3/4”NPT Pipe Thread
- Connection: Low-noise cable goes out directly.
- Application: Measurement of all kinds of pure water and high-purity water.

## Features of PH Electrode

- It adopts the world-class solid dielectric and a large area of PCE liquid for junction, difficult to block and convenient maintenance.
- Long-distance reference diffusion channel greatly extends the service life of electrodes in the harsh environment.
- It adopts PPS/PC casing and the upper and lower 3/4”NPT pipe thread, so it is easy for installation and there is no need of the jacket, thus saving the installation cost.
- The electrode adopts the high-quality low-noise cable, which makes the signal output length more than 40 meters free of interference.
- There is no need for additional dielectric and there is a little amount of maintenance.
- High measurement accuracy, fast echoing and good repeatability.
- Reference electrode with silver ions Ag/AgCL
- Proper operation shall make service life longer.
- It can be installed in the reaction tank or pipe laterally or vertically.
- The electrode can be replaced by a similar electrode made by any other

**Electrode Structure Chart**




**Electrode Wiring Plug**

BNC (Q9) Plug Pin Y Plate

**Application field:** Medicine, chlor-alkali chemicals, dyes pigments, pulp and paper, intermediates, fertilizers, starch, water and environmental protection industries, high purity water measurement.

# MDPHS50 Industrial PH Sensor

## Features

- It adopts the world-class solid dielectric and a large area of PTFE liquid for junction,difficult to block and easy to maintain.
- Long-distance reference diffusion channel greatly extends the service life of electrodes in the harsh environment.
- There is no need for additional dielectric and there is a little amount of maintenance.
- High accuracy, fast response and good repeatability

## Model No.: MDPHS50

- Measuring range: 0~14PH
- Accuracy: ≤ 0.02PH
- Slope: ≥96%
- Internal resistance: ≤ 50MΩ (25℃)
- Applicable temperature: 0~60℃
- Response time: ≤ l0sec
- Zero point potential: $E_0$=7PH±0.3
- Drift: ≤ 0.03PH/24h no accumulation
- Installation: Rotary locking type and tail 3/4”thread (Rotate the electrode for 1/4” circle to insert it into or take it out of the process.)
- It is widely used for measurement of all kinds of pure water and high-purity water in such places as thermal power plants (with the flow cell).

# MDPHS60 PH Antimony Sensor

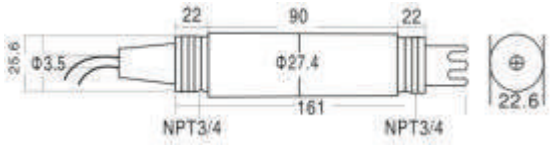
## Features

- It adopts the world-class solid dielectric and a large area of PTFE liquid for junction, difficult to block and easy to maintain.
- Long-distance reference diffusion channel greatly extends the service life of electrodes in the harsh environment.
- There is no need for additional dielectric and there is a little amount of maintenance.
- High accuracy, fast response and good repeatability

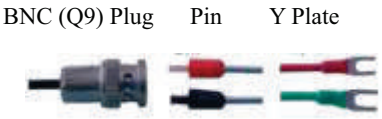
## Model No.: MDPHS60

- Measuring range: 0~14PH
- Temperature range: 0-60℃
- Compressive strength: 0.6MPa
- Material: PPS/PC
- Installation Size: Upper and Lower 3/4”NPT Pipe Thread
- Connection: Low-noise cable goes out directly.
- The antimony is relatively sturdy and corrosion-resistant, which meets the requirements for solid electrodes, corrosion resistance and the measurement of the water body containing hydrofluoric acid, such as the wastewater treatment in semiconductors and iron and steel industries. The antimony-sensitive film is used for the industries corrosive to the glass. But there are also limitations. If the measured ingredients are replaced by antimony or react with antimony to produce complex ions, they should not be used.
- Note: Keep the antimony electrode surface cleaning; if necessary, use the fine
- Sandpaper to polish the surface of antimony.

**Electrode Structure Chart**




**Electrode Wiring Plug**




# MDPHS70/MDPHS71/MDPHS72 Industrial PH Sensor

## Technical Indexes

- Measuring range: 0-14pH
- Compressive strength: 0.6MP
- Dimensions: Diameter 12 x 120
- Temperature range: 0-85℃
- Socket: S8 and PGl3.5 thread
- Material: Glass

## Features

- It adopts gel or solid electrolyte, resisting pressure and helping reduce resistance; low
- resistance sensitive membrane.
- Waterproof connector can be used for pure water testing.
- There is no need for additional dielectric and there is a little amount of maintenance.
- It adopts BNC connector, which can be replaced by any electrode
- It can be used in conjunction with 316 L stainless steel sheath or PPS sheath.

## Field of application

- Water treatment, pure water industry, power plants, etc.

# MDPHS80 Industrial PH Sensor

## Technical Indexes

- Model: MDPHS80  Glass PH Electrode
- Measuring range: 0-14PH
- Temperature range: 0-60 ℃
- Features and range: Glass casing, gel KCL special waterproof connector, semi-circular-sensitive membrane, easy to clean
- Refillable KLC

## Features

- It adopts gel or solid electrolyte, resisting pressure and helping reduce resistance; low resistance sensitive membrane.
- Waterproof connector can be used for pure water testing.
- There is no need for additional dielectric and there is a little amount of maintenance.
- It adopts BNC connector, which can be replaced by any electrode
- It can be used in conjunction with 316 L stainless steel sheath or PPS sheath.

## Field of application

Water treatment, pure water industry, power plants, etc.

# MDPHS81 Industrial PH Sensor

## Technical Indexes

- Measuring range: 0-14pH
- Temperature range: 0-95℃
- Compressive strength: 0.6MPa
- Connection: S7 and PG13.5
- Dimensions: Diameter 12×120mm ,150mm, 210mm

## Features

- It adopts gel dielectric and solid dielectric double liquid junction structure, which can be directly used in the chemical process of the high-viscosity suspension, emulsion, the liquid containing protein and other liquids, which are easy to choke.
- There is no need for additional dielectric and there is a little amount of maintenance.With water resistant connector, can be used for pure water monitoring.
- It adopts S7 and PG13.5 connector, which can be replaced by any electrode
- For the electrode length, there are 120,150 and 210 mm available.
  It can be used in conjunction with 316 L stainless steel sheath or PPS sheath.

## Application field

- Chemical medicine on-line monitoring, chrome-removing line, dyes, pigments, mining, pulp mills, starch, mud, sugar, high viscosity suspensions, emulsions, the solution containing proteins, etc.

# MDPHS100 High-temperature PH Sensor

## Technical Indexes

- Measuring range: 0-14PH
- Temperature range: 0-130 ℃
- Compressive strength: 0.4MPa
- Sterilization temperature: ≤ l30 ℃
- Socket: S8
- Dimensions: Diameter 12×120, 150, 210, 260 and 320mm

## Features

- It adopts heat-resisting gel dielectric and solid dielectric double liquid junction structure; in the circumstances when the electrode is not connected to the back pressure, the withstand pressure is 0.4MPa. It can be directly used for l30℃ sterilization.
- There is no need for additional dielectric and there is a little amount of maintenance.
- It adopts S8 and PGl3.5 thread socket, which can be replaced by any electrode.
- For the electrode length, there are 120, 150, 210, 260 and 320 mm available; according to different needs, they are optional.
- It is used in conjunction with 316L stainless sheath.

## Field of application

- Bio-engineering: Amino acids, blood products, gene, insulin and interferon.
- Pharmaceutical industry: Antibiotics, vitamins and citric acid
- Beer: Brewing, mashing, boiling, fermentation, bottling, cold wort and deoxy water
- Food and beverages: On-line measurement for MSG, soy sauce, dairy products, juice, yeast, sugar,
- drinking water and other bio-chemical process.

# MDPHS101 K8S High-temperature PH Sensor

## Technical Indexes

- Measuring range: 0-14PH
- Temperature range: 0-130 ℃
- Compressive strength: 0.4MPa
- Sterilization temperature: ≤ l30 ℃
- Socket: K8S
- Dimensions: Diameter 12×120, 150, 210, 260 and 320mm

## Features

- It adopts heat-resisting gel dielectric and solid dielectric double liquid junction structure; in the circumstances when the electrode is not connected to the back pressure, the withstand pressure is 0.4MPa. It can be directly used for l30℃ sterilization.
- There is no need for additional dielectric and there is a little amount of maintenance.
- It adopts K8S and PGl3.5 thread socket, which can be replaced by any electrode.
- For the electrode length, there are 120, 150, 210, 260 and 320 mm available; according to different needs, they are optional.
- It is used in conjunction with 316L stainless sheath.

## Field of application

- Bio-engineering: Amino acids, blood products, gene, insulin and interferon.
- Pharmaceutical industry: Antibiotics, vitamins and citric acid
- Beer: Brewing, mashing, boiling, fermentation, bottling, cold wort and deoxy water
- Food and beverages: On-line measurement for MSG, soy sauce, dairy products, juice, yeast, sugar, drinking water and other bio-chemical process.

# MDPHS102VP High-temperature PH Sensor

## Technical Indexes

- Measuring range: 0-14PH
- Temperature range: 0-130 ℃
- Compressive strength: 0.4MPa
- Sterilization temperature: ≤ 130℃
- Socket: VP
- Dimensions: 12×120 mm
- Temperature compensation: PT1000

## Features

- It adopts heat-resisting gel dielectric and solid dielectric double liquid junction structure; in the circumstances when the electrode is not connected to the back pressure, the withstand pressure is 0.4MPa. It can be directly used for 130℃ sterilization.
- There is no need for additional dielectric and there is a little amount of maintenance.
- It adopts VP socket, which can be replaced by any electrode.
- For the electrode length, there are 120, 150, 210, 260 and 320 mm available; according to different needs, they are optional.
- It is used in conjunction with 316L stainless sheath.

## Field of application

- Bio-engineering: Amino acids, blood products, gene, insulin and interferon.
- Pharmaceutical industry: Antibiotics, vitamins and citric acid
- Beer: Brewing, mashing, boiling, fermentation, bottling, cold wort and deoxy water
- Food and beverages: On-line measurement for MSG, soy sauce, dairy products, juice, yeast, sugar, drinking water and other bio-chemical process.

# MDPHS103 High-temperature PH Sensor

## Technical Indexes

- Measuring range: 0-14PH
- Temperature range: 0-130℃
- Compressive strength: 0.6MPa (installed in the pressurized sheath )
- Socket: S7
- Electrode size: Diameter 12×120, 150, 210, 260, 320 mm

## Features

- It can be used in conjunction with the pressurized sheath; it can resist the pressure to 0.6MPa and endures the high-temperature sterilization.
- High measurement accuracy and good repeatability.
- Long life.
- It adopts the S7 socket or PG13.5 thread socket, which can be replaced by any electrode.

## Field of application

- Bio-engineering: Amino acids, blood products, gene, insulin and interferon.
- Pharmaceutical industry: Antibiotics, vitamins and citric acid
- Beer: Brewing, mashing, boiling, fermentation, bottling, cold wort and deoxy water
- Food and beverages: On-line measurement for MSG, soy sauce, dairy products, juice, yeast, sugar, drinking water and other bio-chemical process.

# MDPHS104 Industrial Desulfurization PH Sensor

Desulfurization of pH measurement of pH electrode is used for flue gas desulfurization, the electrode adopts the gel electrode, free maintenance, electrode under high temperature or high pH can still maintain high precision.

## The basic principle of PH electrode

For measurement of the PH electrode is also known as Primary battery. Primary battery is a system; its role is to make the chemical energy into electricity. The battery voltage is called the electromotive force (EMF). The electromotive force (EMF) consists of two half cell. One and a half cell called measuring battery, its potential is associated with specific ion activity; another one and a half in reference battery, often referred to as the reference electrode, it is general and measuring solution are interlinked, and connected to the measuring instrument.
PH electrode made by plane glass ball bubble, high pollution resistance and resistant to impact.

## Technical indexes

- Measuring range :0~14 PH
- Temperature range :0~95℃
- Withstand voltage :0.6 Mpa
- Material :PPS
- Slope :<96%
- Zero potential :7PH ±0.3
- Installation dimension : The upper and lower 3/4”NPT pipe thread
- Standard length :5m
- Can be equipped with thermistor :2.252K,  PT100
- Connection mode : Low noise cable leads directly
- Application : Used in all kinds of industrial wastewater treatment, environmental protection water treatment and pH measurement of flue gas desulfurization

# MDPHS105 Industrial Digital pH Sensor

## Summary

MDPHS105 Series of online pH electrode, adopt electrode measuring method, and realizes the automatic temperature compensation in the interior of the electrodes, Automatic identification of standard solution. Electrode adopt imported composite electrode, high precision, good stability, long lifetime, with rapid response, low maintenance cost, real-time online measurement characters etc.. The electrode using standard Modbus RTU (485) communication protocol, 24V DC power supply, four wire mode can very convenient access to sensor networks.

## Characters

- The characteristics of industrial sewage electrode, can work stably for a long time
- Built in temperature sensor, real-time temperature compensation
- RS485 signal output, strong anti-interference ability, the output range of up to 500m
- Using the standard Modbus MDPHS105 communication protocol
- The operation is simple, the electrode parameters can be achieved by remote settings, remote calibration of electrode
- 24V DC power supply.

## Technical specifications

| | |
|---|---|
| Parameter measurement | pH, Temperature |
| Measure range | pH：0.0~14.0<br>Temperature：（0~50.0）℃ |
| Accuracy | pH：±0.1pH<br>Temperature：±0.5℃ |
| Resolution | pH：0.01pH<br>Temperature：0.1℃ |
| Power supply | 24V DC |
| Power dissipation | 1W |
| communication mode | RS485(Modbus RTU) |
| Cable length | Can be OEM depend on user's requirements |
| Installation | Sinking type, pipeline, circulation type etc. |
| Overall size | 230mm×φ30mm |
| Housing material | ABS |