

Practical Advice for pH Electrode

Calibration and Measurement

- For the refillable electrode, the refilling hole should be open during measurement.
- The electrode should be immersed far enough to cover the diaphragm. The height of the electrolyte must always be above that of the sample. This prevents the sample solution from entering into the electrode.
- For the refillable electrode, please use the recommended electrolyte to refill the electrode.
- When calibrating and measuring, it is necessary to wait till the temperature is stable and then read the measurement or conduct further operation.
- Dab the electrode with paper towel after rinsing. Do not rub the glass membrane of the electrode, otherwise, the response time will be affected as friction arises static electricity.
- Always use fresh buffer to calibrate the electrode, especially the basic type.

Temperature Influences

- pH value of the sample and the potential difference of the electrode will be influenced by temperature. As the temperature dependency of the sample is unknown, the automatic temperature compensation of the device is important. For precision measuring, it's better to calibrate and measure at the same temperature.

Storage

- For storage, please put the electrode in the reference electrolyte and close the refilling hole. Please do not store the electrode in distilled water.

Cleaning

- The diaphragm and the glass membrane should be kept clean in order to avoid long response time. To remove oil, fat, and organic substances, clean with soap and hot water is recommended. For protein contamination, soak the electrode in 1 mol HCl and pepsin solution for at least one hour. Then soak the electrode in the reference electrolyte for a few hours. Recalibrate the electrode before measuring.

Life Span of the Electrode

- All the pH electrodes have aging problem. The common symptoms are long time response, slope descending and zero potential deviation. The aging speed lies on measuring condition, maintenance, and the temperature of the sample. For measuring in room temperature, the life span of the electrode would be 1-3 years. If measuring continuously in 90°C, the life span might only be a few months.

Shanghai San-Xin Instrumentation, Inc.
(Shanghai Apera Instruments Co., Ltd.)
Add: 4F, Building #16, No.481 Guiping Rd
Shanghai China
Tel: +86-21-63362480
E-mail: wxmab@shsan-xin.com
Website: www.shsan-xin.com

Apera Instruments, LLC (U.S.A)
Add: 6656 Busch Blvd,
Columbus Ohio 43229
Tel: +1-614-285-380
Email: info@aperainst.com
Website: www.aperainst.com

Apera Instruments, GmbH (Europe)
Add: Wilhelm-Muthmann-Str.15
42329 Wuppertal Germany
Tel. +49 (0)202 51988998
Email: info@aperainst.de
Website: www.aperainst.de

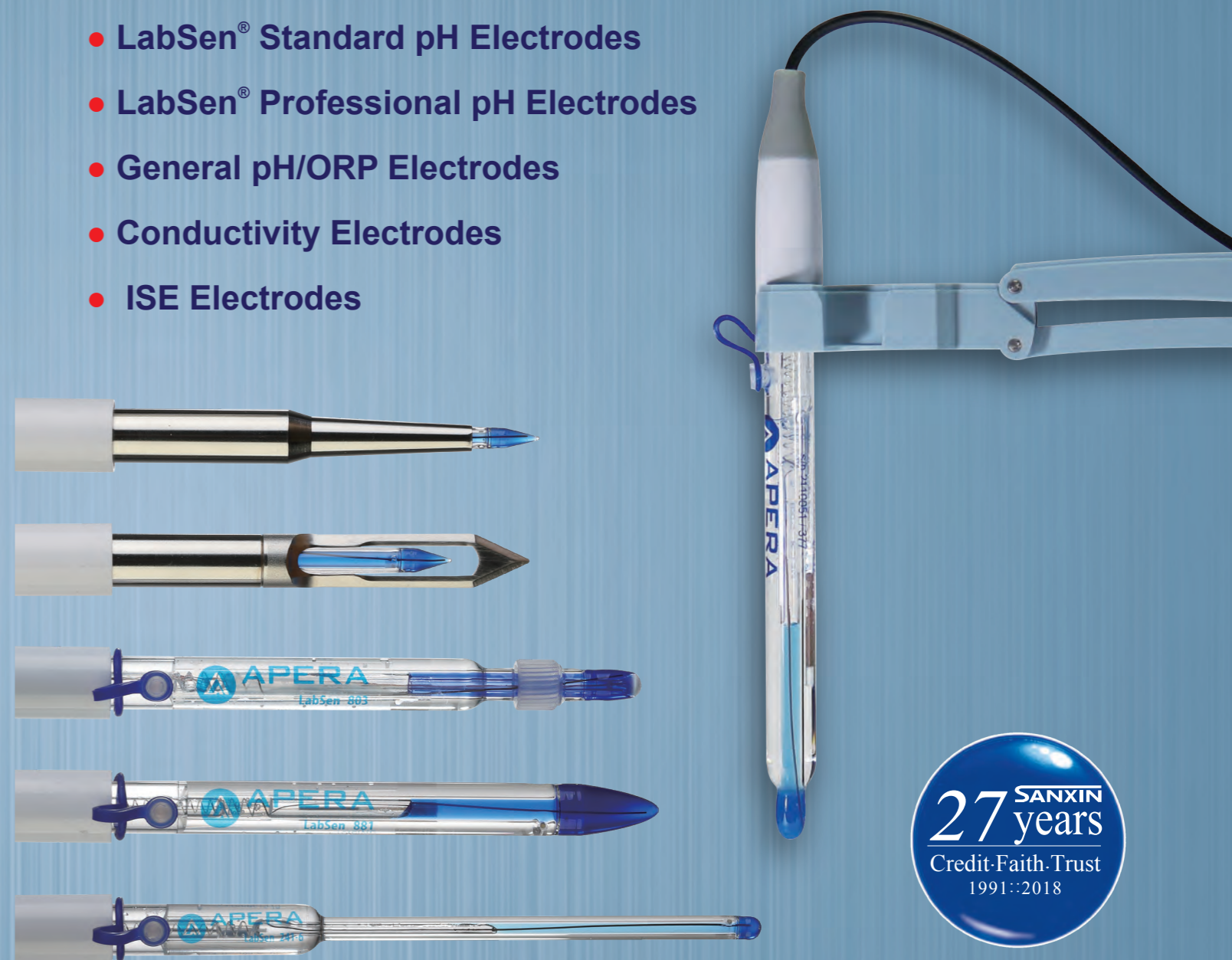
APER[®]
INSTRUMENTS

SANXIN

LabSen[®] Series

Laboratory Electrochemical Electrodes

- LabSen[®] Standard pH Electrodes
- LabSen[®] Professional pH Electrodes
- General pH/ORP Electrodes
- Conductivity Electrodes
- ISE Electrodes





Founded in Year 1991, located in Shanghai Caohejing Industrial Park, Shanghai Sanxin Instrumentation Inc. is specialized in electrochemical instruments and sensors development and production. In year 2014, We brought together premium pH electrode manufacturing technologies and key components from Switzerland into the LabSen® series pH electrodes, which includes two categories: Standard and Professional where there are more than 30 different models in total, representing the world's leading pH electrode technology. Our mission is to offer you the first-class products and service so that you can always have an accurate, reliable, and convenient testing experience.

1. Technical Features of LabSen pH Electrode

2. LabSen Standard pH Electrode

LabSen 211 Routine pH Electrode	03
LabSen 213 Routine 3-in-1 pH Electrode	03
LabSen 231 Premium pH Electrode	03
LabSen 221 Premium pH Electrode	03
LabSen 223 Precise pH Electrode	04
LabSen 331 Plastic Premium pH Electrode	04
LabSen 333 Plastic Premium 3-in-1 pH Electrode	04
LabSen 371 Plastic Premium pH Electrode	04
LabSen 241-6 Semi-Micro pH Electrode	05
LabSen 241-3 Micro pH Electrode	05
LabSen 251 Glass Spear pH Electrode	05
LabSen 551 Plastic Spear pH Electrode	05

3. LabSen Professional pH Electrode

LabSen 801 Pure Water pH Electrode	06
LabSen 803 Pure Water 3-in-1 pH Electrode	06
LabSen 811 Ultrapure Water pH Electrode	06
LabSen 813 Ultrapure Water 3-in-1 pH Electrode	06

LabSen 821 Food pH Electrode	07
LabSen 751 Stainless Steel Sheath	
Spear pH Electrode	07
LabSen 761 Blade Spear pH Electrode	07
LabSen 831 HF pH Electrode	07
LabSen 841 Strong Base pH Electrode	08
LabSen 851-1 Viscous pH Electrode	08
LabSen 851-3 Viscous pH Electrode	08
LabSen 881 Low Temperature pH Electrode	08

4. General pH Electrodes

5. General pH/ORP Electrodes

6. Conductivity Electrodes

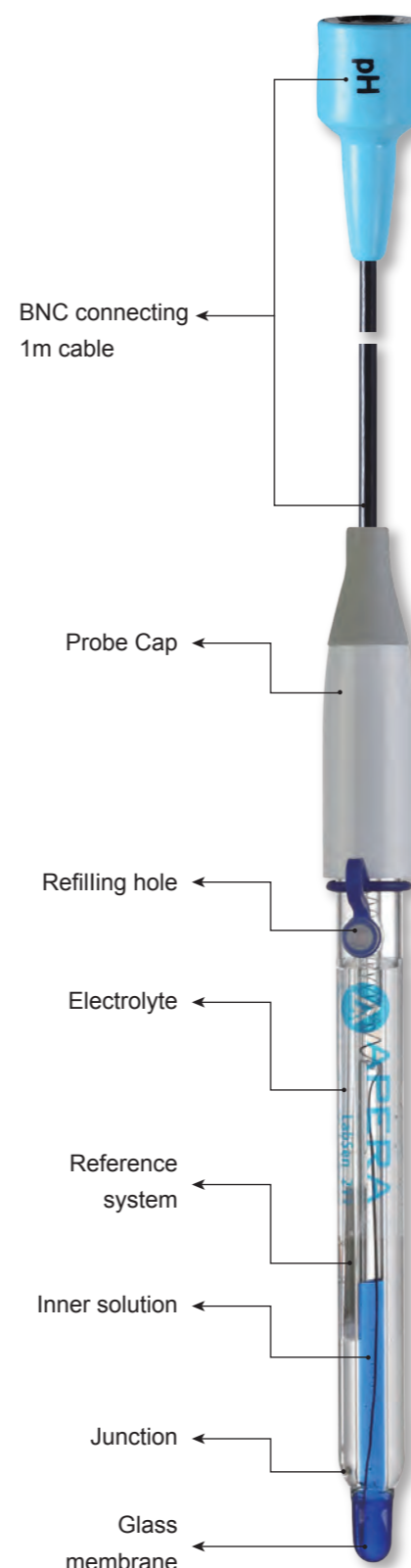
7. ISE Electrodes

8. Reference Electrode & DO Sensor

Glass Membrane

Glass membrane is the most important part of pH electrode.

- LabSen pH electrodes are equipped with 4 types of glass membrane to meet various applications: S membrane, H membrane, HF membrane and PHY membrane. For example HF membrane is used for HF resistance electrode.
- LabSen glass membrane has good impact resistance. It will not be damaged by general intensity impact, completely differentiating from conventional glass membranes.
- LabSen glass membrane with different shapes are shown as below:



Junction

Junction is the electrolyte interface between reference system and the solution to be measured, LabSen electrode adopts the following types of junctions:

- Ceramic -- the most frequently used junction, easy to be blocked by protein-containing or suspension solution.
- Pore without diaphragm -- it is used with solid electrolyte, no clogging, maintenance-free.
- Movable sleeve -- easy to clean, suitable for suspension, emulsion, low ion concentration solution and nonaqueous solution. The infiltration rate of electrolyte is determined by the tightness of the sleeve during installation.
- PTFE -- a kind of Teflon material with multi pores, hard to be contaminated.

Inner Solution

The inner solution of LabSen electrode is in a unique dark blue. With a special gel treatment, the inner solution does not flow and will not cause air bubbles. The electrode can work well even when being upside down.

Reference System

Besides routine Ag/AgCl reference electrode, LabSen pH electrodes are more likely to adopt Long-life reference electrode and Silver-ion-trap reference electrode.



Long-life reference system

Long-life reference system is composed of a glass tube, AgCl and reference silver wire. The top end of the slim glass tube is stuffed with cotton, which will prevent reaction between AgCl and electrolyte when temperature changes, improving the stability of reference electrode and service life.



Reference system with Silver-ion-trap

Based on the Long-life reference system, a Silver-ion-trap is added to prevent the contamination of the junction when testing samples contains sulfides and proteins, significantly increasing the stability of the reference electrode.

Electrolyte

In addition to the conventional 3M KCl solution and gel type, LabSen pH electrode adopts the following special electrolyte:

- Polymer: a new type of polymer reference electrolyte. Main technical features: The reference electrode is with single pore or multi-pore, without diaphragm. The polymer electrolyte directly contacts with test samples. The anti-pressure capacity can reach 6 bars. It is suitable for almost all applications, including samples containing oil, low ion concentration, protein, and suspension.
- Protelyte: suitable for testing samples containing protein, low temperature samples and viscous samples

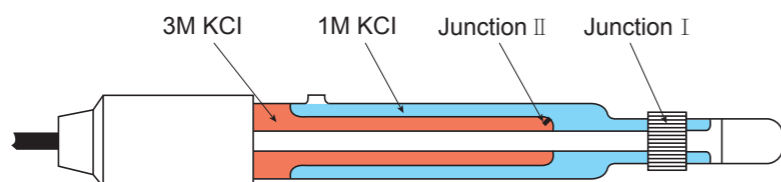
Swiss patented Technology- pH/Temp. Combination Structure



The LabSen pH electrode adopts Swiss patented pH/Temp. combination structure. The conventional way to make the glass pH/Temperature combination electrode is to place the temperature sensor inside the bulb or electrode. As the bulb and the electrodes are filled with solution, the temperature sensing is very slow. Adopting the patented structure, the temperature sensor is placed in an independent cavity under the pH glass membrane. With built-in heat conducting medium, the temperature sensing speed can be increased by 40%. The response rate and stability of the pH electrode are greatly improved.

Double Junction pH Electrode for Ultrapure Water

The following picture is the sketch of LabSen pH electrode for ultra-pure water. There are two junctions and two reference cavities. It is Junction I in movable sleeve form that will be in contact with ultrapure water. The reference solution is 1M KCl. The density gradient and polarization effect on the glass membrane will be decreased and the measuring stability will be greatly improved..



pH Electrode with Pre-pressure

The Pre-pressurized electrode is an electrode prefilled with certain pressure. Even in highly viscous samples, the electrolyte can still infiltrate well, preventing from clogging, ensuring the stability and repeatability of measurement. This type of electrode is especially suitable for testing highly viscous samples, like cosmetics, paint, resin, etc.

LabSen211 Routine pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Ceramic
Reference	Long-life
Electrolyte	3M KCl
Length	120mm
Diameter	12mm
Membrane Shape	Hemispherical



Range: 0~14 pH
Temp.: -5~100°C
Connector: BNC/1m cable

Application: routine laboratory use
Features: impact-resistant glass membrane

LabSen213 Routine 3-in-1 pH Electrode

Body	Lead-free Glass
Temp. Probe	NTC 30kΩ
Junction	Ceramic
Reference	Long-life
Electrolyte	3M KCl
Length	120mm
Diameter	12mm
Membrane Shape	Cylindrical

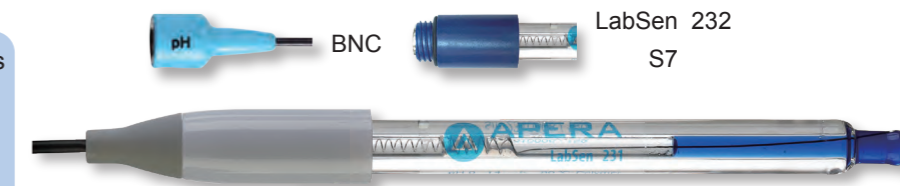


Range: 0~14 pH
Temp.: -5~100°C
Connector: BNC/RCA 1m cable

Application: routine laboratory use
Features: impact-resistant glass membrane, patented ATC structure.

LabSen231 Premium pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	2-pore
Reference	Long-life
Electrolyte	Polymer
Length	120mm
Diameter	12mm
Membrane Shape	Hemispherical



Range: 0~14 pH
Temp.: -5~80°C
Connector: BNC/1m cable

Application: suitable for wastewater, emulsion, suspension, effluent.
Features: with 2-pore and solid electrolyte, hard to be contaminated, high compression-resistance.

LabSen221 Premium pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Movable Sleeve
Reference	Long-life
Electrolyte	3M KCl
Length	130mm
Diameter	12mm
Membrane Shape	Cylindrical

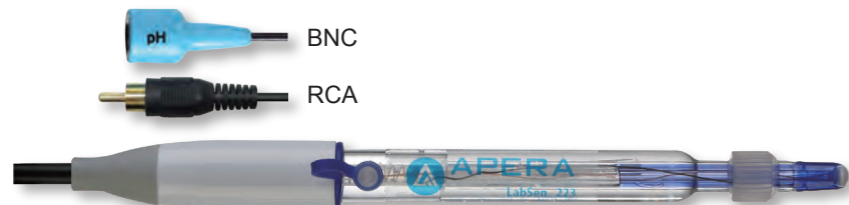


Range: 0~14 pH
Temp.: -5~80°C
Connector: BNC/1m cable

Application: suitable for viscous and low ion concentration samples.
Features: with movable sleeve and BNC connector.

LabSen223 Precise pH Electrode

Body	Lead-free Glass
Temp. Probe	NTC 30kΩ
Junction	Movable Sleeve
Reference	Long-life
Electrolyte	3M KCl
Length	130mm
Diameter	12mm
Membrane Shape	Cylindrical

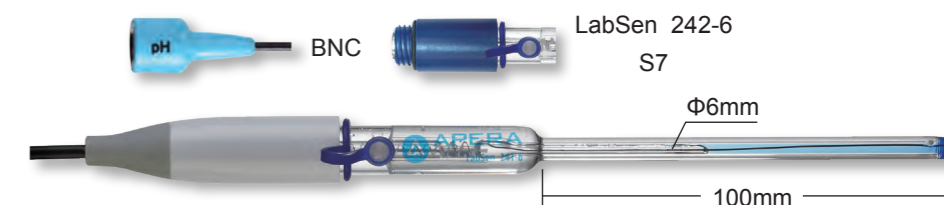


Range: 0~14 pH
Temp.: -5~80°C
Connector: BNC/RCA 1m cable

Application: suitable for viscous and low ion concentration samples, integrated ATC structure.
Features: with movable sleeve and BNC/RCA connector.

LabSen241-6 Semi-Micro pH Electrode

Body	Lead-free Glass
Temp. Probe	Probe
Junction	Ceramic
Reference	Long-life
Electrolyte	3M KCl
Length	150mm
Diameter	12-6mm
Membrane Shape	Slim



Range: 0~14 pH
Temp.: 0~100°C
Connector: BNC/1m cable

Application: suitable for small volume (≥0.2ml) sample or tests in test tubes.
Features: dimension of the measuring tip: Φ6×100mm.

LabSen331 Plastic Premium pH Electrode

Body	POM
Temp. Probe	No
Junction	1-pore
Reference	Long-life
Electrolyte	Polymer
Length	120mm
Diameter	12mm
Membrane Shape	Spherical

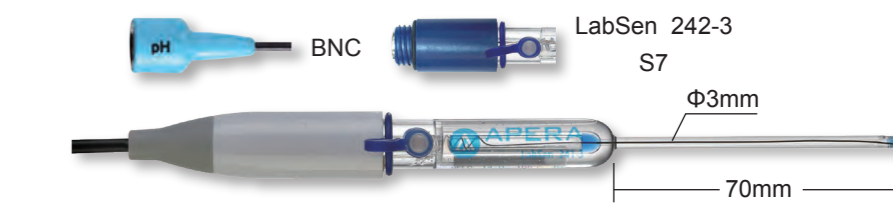


Range: 0~14 pH
Temp.: 0~80°C
Connector: BNC/1m cable

Application: suitable for wastewater, emulsion, suspension, effluent
Features: With anti-corrosion body, 1-pore, solid electrolyte, contamination-resistant, high compression resistance, BNC connector.

LabSen241-3 Micro pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Ceramic
Reference	Long-life
Electrolyte	3M KCl
Length	130mm
Diameter	12-3mm
Membrane Shape	Slim



Range: 0~14 pH
Temp.: 0~100°C
Connector: BNC/1m cable

Application: suitable for micro sample (≥30μL), or tests in centrifuge tubes and NMR tubes.
Features: dimension of the measuring tip: Φ3×70mm.

LabSen333 Plastic Premium3-in-1 pH Electrode

Body	POM
Temp. Probe	NTC 30KΩ
Junction	1-pore
Reference	Long-life
Electrolyte	Polymer
Length	120mm
Diameter	12mm
Membrane Shape	Spherical

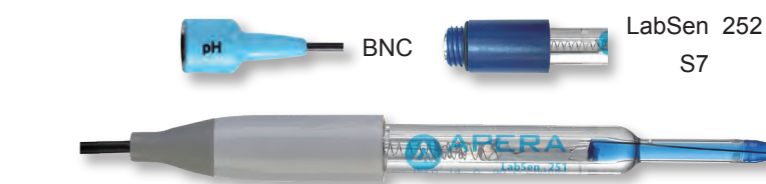


Range: 0~14 pH
Temp.: 0~80°C
Connector: BNC/RCA 1m cable

Application: suitable for wastewater, emulsion, suspension, effluent
Features: with anti-corrosion body, 1-pore, solid electrolyte, contamination-resistant, high compression resistance, BNC/RCA connector.

LabSen251 Glass Spear pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Ceramic +Single Pore
Reference	Long-life
Electrolyte	Polymer
Length	100mm
Diameter	12-6mm
Membrane Shape	Spear

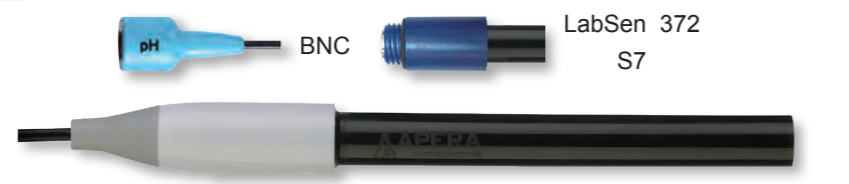


Range: 0~14 pH
Temp.: 0~80°C
Connector: BNC/1m cable

Application: suitable for soft solid medium, e.g. cheese, fruit, sushi, etc.
Features: solid electrolyte, hard to be contaminated and maintenance-free.

LabSen371 Plastic Premium pH Electrode

Body	POM
Temp. Probe	No
Junction	PTFE
Reference	Long-life
Electrolyte	Gel KCl
Length	105mm
Diameter	12mm
Membrane Shape	Flat

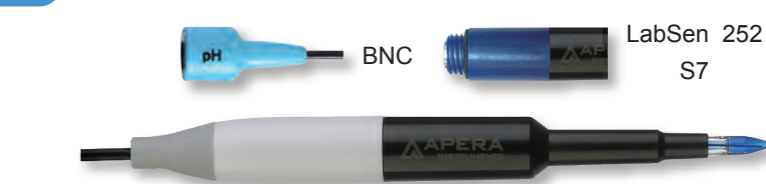


Range: 0~14 pH
Temp.: 0~80°C
Connector: BNC/1m cable

Application: suitable for flat surface measurement, e.g. paper, skin, textile, leather or wall coatings etc.
Features: fast response, and with Long-life reference system.

LabSen551 Plastic Spear pH Electrode

Body	PVC
Temp. Probe	No
Junction	Ceramic +Single Pore
Reference	Long-life
Electrolyte	Polymer
Length	90mm
Diameter	15-6mm
Membrane Shape	Spear

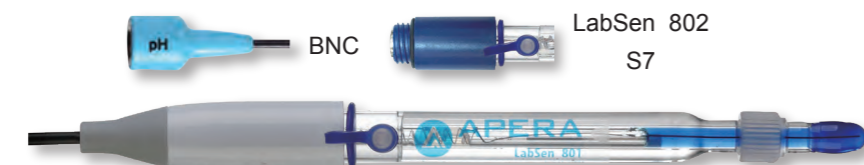


Range: 0~14 pH
Temp.: 0~80°C
Connector: BNC/1m cable

Application: suitable for direct soil tests
Features: solid PVC body, polymer electrolyte, contamination-resistant and maintenance-free.

LabSen801 Pure Water pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Movable Sleeve
Reference	Silver Ion Trap
Electrolyte	3M KCl
Length	130mm
Diameter	12mm
Membrane Shape	Cylindrical

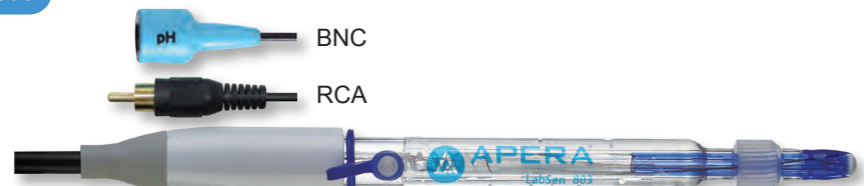


Range: 1~11 pH
Temp.: 0~80°C
Connector: BNC/1m cable

Application: suitable for purified water measurement such as RO water, distilled water etc.
Features: movable sleeve; with silver ion trap reference system, generating stable and accurate readings quickly.

LabSen803 Pure Water 3-in-1 pH Electrode

Body	Lead-free Glass
Temp. Probe	NTC 30KΩ
Junction	Movable Sleeve
Reference	Silver Ion Trap
Electrolyte	3M KCl
Length	130mm
Diameter	12mm
Membrane Shape	Cylindrical



Range: 1~11 pH
Temp.: 0~80°C
Connector: BNC/RCA 1m cable

Application: suitable for purified water measurement such as RO water, distilled water etc.
Features: movable sleeve; with silver ion trap reference system, generating stable and accurate readings quickly. Patented ATC structure.

LabSen811 Ultrapure Water pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Movable Sleeve
Reference	Silver Ion Trap
Electrolyte	1M KCl
Length	130mm
Diameter	12mm
Membrane Shape	Cylindrical



Range: 1~11 pH
Temp.: 0~80°C
Connector: BNC/1m cable

Application: suitable for high-purity water and ultrapure water.
Features: movable sleeve, double junction, 1 mol/L KCl salt bridge electrolyte, with silver ion trap reference system, preventing clogging and generating fast and stable readings.

LabSen813 Ultrapure Water 3-in-1 pH Electrode

Body	Lead-free Glass
Temp. Probe	NTC 30KΩ
Junction	Movable Sleeve
Reference	Silver Ion Trap
Electrolyte	1M KCl
Length	130mm
Diameter	12mm
Membrane Shape	Cylindrical

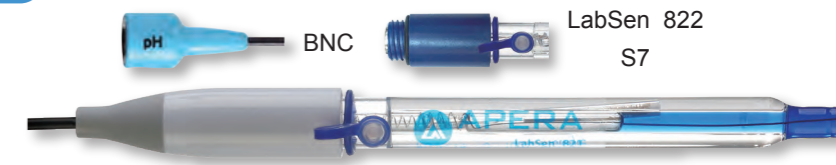


Range: 1~11 pH
Temp.: 0~80°C
Connector: BNC/RCA 1m cable

Application: suitable for high purity water and ultrapure water, integrated ATC structure.
Features: movable sleeve, double junction, 1mol/L KCl salt bridge electrolyte, with silver ion trap reference system, patented ATC structure.

LabSen821 Food pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Ceramic×3
Reference	Silver Ion Trap
Electrolyte	Protelyte
Length	120mm
Diameter	12mm
Membrane Shape	Hemispherical

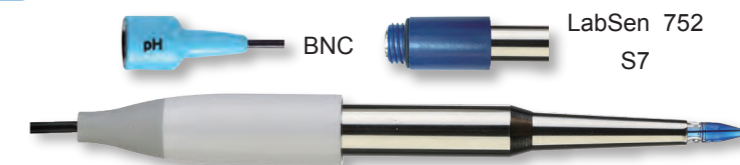


Range: 0~14 pH
Temp.: -5~100°C
Connector: BNC/1m cable

Application: suitable for protein-containing dairy and food.
Features: Protelyte reference solution, with silver ion trap reference system, preventing junction from being clogged and contaminated by silver sulfide or protein.

LabSen751 Stainless Steel Sheath Spear pH Electrode

Body	Stainless steel
Temp. Probe	No
Junction	Ceramic+Single Pore
Reference	Long-life
Electrolyte	Polymer
Length	115mm
Diameter	12-5mm
Membrane Shape	Spear

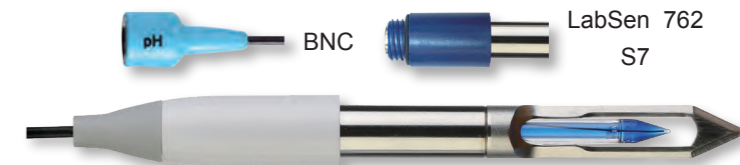


Range: 0~14 pH
Temp.: 0~80°C
Connector: BNC/1m cable

Application: suitable for cream, bread and fruit etc.
Features: food grade stainless steel sheath, firm and durable; solid electrolyte, suitable for solution containing grease and protein, contamination-resistant and maintenance-free; Long-life reference electrode.

LabSen761 Blade Spear pH Electrode

Body	Stainless steel blade
Temp. Probe	No
Junction	Ceramic+Single Pore
Reference	Long-life
Electrolyte	Polymer
Length	115mm
Diameter	12mm
Membrane Shape	Spear

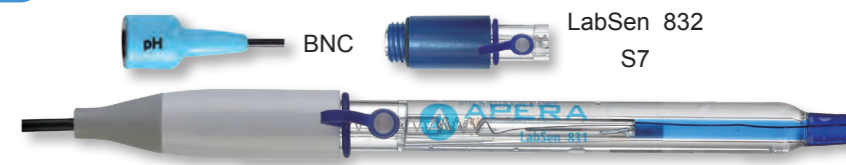


Range: 0~14 pH
Temp.: 0~80°C
Connector: BNC/1m cable

Application: suitable for meat, fish, and meat products.
Features: food grade stainless steel body and blade; solid electrolyte, suitable for solid samples containing grease and protein, contamination-resistant and maintenance-free.

LabSen831 HF pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Ceramic
Reference	Silver Ion Trap
Electrolyte	3M KCl
Length	120mm
Diameter	12mm
Membrane Shape	Hemispherical



Range: 0~11 pH
Temp.: 0~100°C
Connector: BNC/1m cable

Application: suitable for solution containing HF(≥3pH), or other strong acid solutions.
Features: special HF glass membrane, HF corrosion resistance; with silver ion trap reference system, prevent the junction from being clogged and contaminated by silver sulfide or protein.

LabSen841 Strong Base pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Ceramic
Reference	Silver Ion Trap
Electrolyte	3M KCl
Length	120mm
Diameter	12mm
Membrane Shape	Hemispherical

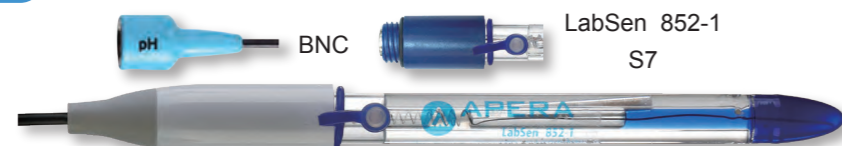


Ranger: 2~14 pH
Temp.: 0~100°C
Connector: BNC 1m cable

Application: suitable for high temperature and strong base solution (10~14pH).
Features: special H glass membrane, high temperature and alkaline corrosion resistance; with silver ion trap reference system, clog-resistant.

LabSen851-1 Viscous pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Ceramic×3
Reference	Silver Ion Trap
Electrolyte	Protelyte
Length	120mm
Diameter	12mm
Membrane Shape	Conical



Ranger: 0~14 pH
Temp.: 0~100°C
Connector: BNC 1m cable

Application: suitable for viscous samples.
Features: 3 ceramic diaphragm; Protelyte reference solution; with silver ion trap reference system, preventing the junction from being clogged and contaminated by silver sulfide or protein.

LabSen851-3 Viscous pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Ceramic
Reference	Pre pressurized
Electrolyte	Gel KCl
Length	120mm
Diameter	12mm
Membrane Shape	Hemispherical

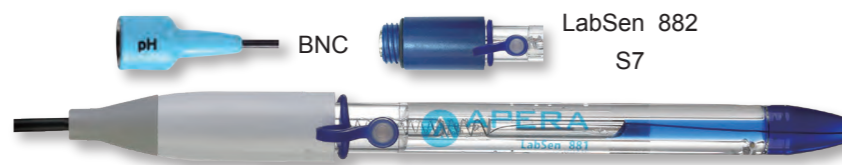


Ranger: 0~14 pH
Temp.: 0~130°C
Connector: BNC 1m cable

Application: suitable for highly viscous samples e.g. cosmetics, paint, resin, etc.
Features: pre pressurized reference system; steady outflowing electrolyte, avoid blocking the junction.

LabSen881 Low Temperature pH Electrode

Body	Lead-free Glass
Temp. Probe	No
Junction	Ceramic×3
Reference	Silver Ion Trap
Electrolyte	Protelyte
Length	120mm
Diameter	12mm
Membrane Shape	Conical



Ranger: 1~11 pH
Temp.: -30~80°C
Connector: BNC 1m cable

Application: suitable for low temperature samples.
Features: low-impedance glass membrane, Protelyte reference solution; with silver ion trap reference system, prevent the junction from being blocked and contaminated by silver sulfide or protein.



201-C pH Combination Electrode

Measuring range: 0 to 14 pH Temperature range: 0 to 80°C
Junction: ceramic Reference: Ag/AgCl Body: PC
Dimensions: Φ12 x 160mm Connector: BNC
Features: PC housing, anti-collision; detachable electrode cap; easy to clean; Gel KCL, no need to refill.

Application range: For laboratory and in-field applications. Not suitable for the following circumstances:

- When the test solution is strong alkaline (pH>12)
- When the solution causes corrosion to the housing.
- Temperature of test solution > 60°C

200-C pH Combination Electrode

Measuring range: 0 to 14 pH Temperature range: 0 to 80°C
Junction: ceramic Reference: Ag/AgCl Body: PC
Dimensions: Φ12 x 160mm Connector: BNC
Features & Application: Similar to 201-C; different point: refillable KCL solution; has better precision for consecutive measurements.



201-A pH Combination Electrode

Measuring range: 0 to 14pH Temperature range: 0 to 80°C
Junction: ceramic Reference: Ag/AgCl Body: PC
Dimensions: Φ12 x 170mm Connector: BNC without cable
Features & Application: Similar to 201-C, different point: connector without cable, ideal for use with handheld pH meters; it can also be used with an extended cable.

206-C pH Combination Electrode

Measuring range: 0 to 14pH Temperature range: 0 to 80°C
Junction: ceramic Reference: Ag/AgCl Body: PC
Dimensions: Φ10 x 126mm Connector: BNC
Features & Application: Similar to 201-C, different point: electrode housing comes with a thin diameter, not only suitable for daily measurement, but also ideal for small volume samples or test in test tubes.

201T-F(S) 3-in-1 pH Combination Electrode

Measuring range: 0 to 14pH Temperature range: 0 to 80°C
Junction: ceramic Reference: Ag/AgCl Body: PC
Dimensions: Φ12 x 160mm Temperature sensor: platinum or thermistor
Connector: BNC
Features & Application: PC housing, with a built-in temperature sensor, measuring pH and temperature simultaneously, ATC function.



2015P-C Flat pH Combination Electrode

Measuring range: 0 to 14pH **Temperature range:** 5 to 80°C
Junction: PTFE **Reference:** Ag/AgCl **Body:** PC
Dimensions: Φ15 x 106mm **Connector:** BNC
Features & Application: PVC housing, gel KCL, flat glass membrane, suitable for flat-surface object (such as fruit, skin, meat, paper etc.), cheese and low-volume sampling.

2015P-A Flat pH Combination Electrode

Measuring range: 0 to 14pH **Temperature range:** 5 to 80°C
Junction: PTFE **Reference:** Ag/AgCl **Body:** PC
Dimensions: Φ15 x 106mm **Connector:** BNC
Features & Application: Similar to 2015P-C, different point: connector without cable, ideal for use with handheld pH meters



301Pt-C ORP Combination Electrode

Junction: ceramic **Reference:** Ag/AgCl
Dimensions: Φ12 x 160mm **Connector:** BNC **Body:** PC
Sensor: Φ6 x 2.5 platinum ring
Features: PC housing, Gel KCL, non-refillable. Platinum ring is easy for cleaning and polishing.
Applications: Lab. and in-field use, ideal for use in general water solutions, waste water and electroplating solution.

3501Pt-C Glass ORP Combination Electrode

Junction: ceramic **Reference:** Ag/AgCl
Dimensions: Φ12 x 155mm **Connector:** BNC **Body:** Glass
Sensor: Φ6 x 2.5 platinum ring
Features: Glass housing, refillable KCL. Platinum ring is easy for cleaning and polishing.
Application: Suitable for general water solutions, waste water, electroplating solution and organic sample solution, higher temperature solutions and continuous measuring.

301-C ORP Combination Electrode

Junction: ceramic **Reference:** Ag/AgCl
Dimensions: Φ12 x 160mm **Connector:** BNC **Body:** PC
Sensor: Φ1 x 5mm platinum needle
Features: PC housing, gel KCL, non-refillable;
Application: for use in general water solutions and waste water.



DJS-1-C Glass Conductivity Electrode

Measuring range: 0.5μS/cm~ 200mS/cm **Dimensions:** Φ12 x 145mm
Electrode constant: 1.0±0.2cm⁻¹ **Connector:** BNC **Body:** Glass
Sensor: 5 x 5mm platinum plate (platinum black coating)
Features: Lab routine use. Anti-corrosion with glass housing.

2401-C / 2401T-F (S) Glass Cond. Electrode

Measuring range: 0.5μS/cm~ 200mS/cm **Dimensions:** Φ12 x 145mm
Electrode constant: 1.0±0.2cm⁻¹ **Connector:** BNC **Body:** Glass
Sensor: 5 x 7mm platinum plate (platinum black coating)
Features: The cavity structure renders higher accuracy and better repeatability, making its suitable for high-precision lab testing. Built-in platinum or thermistor is optional.

DJS-0.1-C / DJS-0.1-F (S) Purified Water Glass Cond. Electrode

Measuring range: 0~200μS/cm **Dimensions:** Φ12 x 155mm
Electrode constant: 0.1±0.02cm⁻¹ **Connector:** BNC **Body:** Glass
Sensor: 7 x 18mm platinum plate (platinum black coating)
Features: Equipped with a removable glass flow cell, suitable for purified water and ultra-pure water. Built-in platinum or thermistor is optional.



2301-C / 2301T-F (S) Cond. Electrode

Measuring range: 0.5μS/cm~ 200mS/cm **Dimensions:** Φ12 x 155mm
Electrode constant: 1.0±0.2cm⁻¹ **Connector:** BNC **Body:** PC
Sensor: Φ1.6 x 5.5mm platinum rods (platinum black coating)
Features: Engineering plastic housing, impact-resistant, Built-in platinum or thermistor is optional.

2310-C / 2310T-F (S) Cond. Electrode

Measuring range: 20 ~ 2000mS/cm **Dimensions:** Φ12 x 150mm
Electrode constant: 10±1cm⁻¹ **Connector:** BNC **Body:** PC
Sensor: Φ5 x 5mm platinum ring (platinum black coating)
Feature: High concentration conductivity electrode. Top grade compared with other brands. Accuracy without calibration: ≤±10% of readings; Accuracy after calibration: ≤±1.5% F.S.
Applications: Suitable for high concentrated electrolyte, seawater and high concentrated saltwater. Built-in platinum or thermistor is optional.



Glass membrane ion electrode PVC membrane combination ion electrode Long-life PVC membrane ion electrode Single crystal ion electrode Solid-state ion electrode

Specification

Model	Description	Sensitive Membrane Description	Measurement Range	Temperature Range	Reference Electrode
7801	Na ⁺ electrode	Glass membrane	1~7 pNa (10 ⁻¹ ~10 ⁻⁷ mol/L)	15~45 °C	Model 6212
CA502	Ca ²⁺ electrode	Long-life PVC membrane	1~5.3 pCa (10 ⁻¹ ~5×10 ⁻⁶ mol/L)	5~60 °C	Model 6211
K502	K ⁺ electrode	Long-life PVC membrane	0~6 pK (1~10 ⁻⁶ mol/L)	5~60 °C	Model 6215
NO502	NO ₃ ⁻ electrode	Long-life PVC membrane	0~5.2 pNO ₃ (1~7×10 ⁻⁶ mol/L)	5~60 °C	Model 6215
NH502	NH ₄ ⁺ electrode	Long-life PVC membrane	0.3~4.3 pNH ₄ (0.5~5×10 ⁻⁵ mol/L)	5~45 °C	Model 6215
601	Ca ²⁺ /Mg ²⁺ combination electrode	PVC membrane	1~5 pCa/Mg (10 ⁻¹ ~10 ⁻⁶ mol/L)	5~60 °C	/
F501	F ⁻ combination electrode	Single Crystal	1~6 pF (10 ⁻¹ ~10 ⁻⁶ mol/L)	5~45 °C	/
F502	F ⁻ electrode	Single Crystal	1~6 pF (10 ⁻¹ ~10 ⁻⁶ mol/L)	5~45 °C	Model 6211
CL502	Cl ⁻ electrode	Solid-state	1~4.3 pCl (10 ⁻¹ ~5×10 ⁻⁶ mol/L)	5~60 °C	Model 6215
BR502	Br ⁻ electrode	Solid-state	1~5.3 pBr (10 ⁻¹ ~5×10 ⁻⁶ mol/L)	5~60 °C	Model 6215
I502	I ⁻ electrode	Solid-state	1~6.3 pI (10 ⁻¹ ~5×10 ⁻⁷ mol/L)	5~60 °C	Model 6215
CU502	Cu ²⁺ electrode	Solid-state	1~6.3 pCu (10 ⁻¹ ~5×10 ⁻⁷ mol/L)	5~60 °C	Model 6215



6211 6212 6213 6215

6211 Reference Electrode

Reference solution: 3.5mol/L KCl **Reference Electrode:** Ag/AgCl
Junction: Ceramic diaphragm **Dimension:** Φ12x155mm
Body: Glass **Connector:** custom

6212 Double Junction Reference Electrode

Reference solution: First electrolytic bridge 0.1mol/L KCl, second electrolytic bridge 0.1mol/L CsCl
Reference Electrode: Ag/AgCl **Junction:** Ceramic diaphragm
Dimension: Φ12x155mm **Connector:** custom
Body: Glass **Application:** equipped with Na⁺ ion electrode

6213 Double Junction Reference Electrode

Reference solution: First electrolytic bridge & second electrolytic bridge optional
Reference Electrode: Ag/AgCl **Junction:** Ceramic diaphragm
Dimension: Φ12x155mm **Connector:** custom

6215 Double Junction Reference Electrode

Reference solution: First electrolytic bridge 3.5mol/L KCl, second electrolytic bridge optional
Reference Electrode: Ag/AgCl, **Junction:** Ceramic diaphragm
Dimension: Φ12x155mm **Connector:** custom



DO500 Calibration sheath MP500

DO500 DO Sensor

Sensor type: Polarography **Body:** POM
Dimension: Φ15x180mm

- Measure DO, conductivity and temperature synchronously easy to realize automatic salinity compensation.
- Equipped with calibration sheath and diaphragm cap, easy to use.
- Fast response, polarization time 3~5min.

MP500 Temperature Sensor

Body: Stainless steel **Range:** -10~110 °C
Dimension: Φ5x145mm **Connector:** custom
Temperature element: Pt100, Pt1000 or thermistor