Distributed by: ABQ Industrial LP USA
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Web: https://www.abqindustrial.net **E-mail:** info@abqindustrial.net

HORIBA LAQUA

Electrodes and Accessories

pH	ORP	Ion	Conductivity
Resistivity	Total Dissolved Solids	Dissolved Oxygen	Salinity

WARRANTY 6 MONTHS WARRANTY

MADE IN JAPAN

www.horiba-laqua.com

ABQINDUSTRIAL
PRECISION. RELIABILITY. QUALITY.

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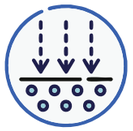
Contents

HORIBA's Expertise in Manufacturing

HORIBA's in-house expertise in the manufacture of electrodes is the accumulation of more than 70 years of experience. Our sophisticated electrode processing technology provides flexibility in designing various shapes of the electrode bulb and different structural designs of the electrodes.



Thick Membrane Technology

HORIBA's glass moulding technology allows the manufacture of tougher pH glass bulbs.

Miniaturization

Unique flat electrode design as well as 3mm diameter micro-electrode with integrated temperature sensor (US Patent No. 7314541/China Patent No. ZL0315796).

Fast Response & Highly Accurate

ToupH glass bulb does not compromise responsiveness and sensitivity (US Patent No. 8262877). Specially designed electrodes are available for hydrofluoric acid & strong alkaline application.

Double-Junction Electrodes

All HORIBA pH combination electrodes are double-junction electrodes.
Flexible to use in a wide-range of applications.

Convenient Slider

Refillable electrodes are equipped with a slider to open or close the refilling port easily.

Built-in Clip for Hooking Onto Electrode Stand Arm

Top housing of electrodes is designed with a built-in clip to hook onto HORIBA's electrode stands.

HORIBA's Expertise in Manufacturing

pH Electrodes

pH Electrodes

Selection Guide

★ Recommended ✓ Can be measured – Not applicable

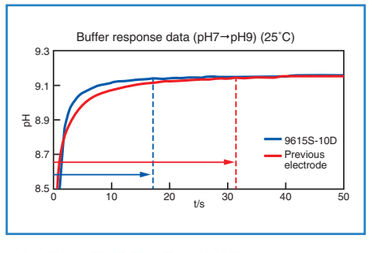
pH Electrodes	3-IN-1											COMBINATION							ISFET	PUREIL
Type	PLASTIC					STANDARD ToupH	LONG ToupH	MICRO ToupH	SLEEVE ToupH	SLEEVE	NEEDLE	PLASTIC	STANDARD ToupH	MICRO ToupH	SLEEVE ToupH	LONG	LONG ToupH	FLAT	GENERAL	GENERAL
Model	9651-10D /9652-10D	9625-10D	9630-10D	9631-10D	9632-10D	9615S-10D	9680S-10D	9618N-10D	9681S-10D	6367N-10D	6252-10D	9425-10C	9415-10C	9418-10C	9481-10C	6069N-10C	9480-10C	6261-10C	0040N-10D	9600-10D
Specifications																				
Applicable temperature range (°C)	0-60 / 0-80	0-100	0-100	0-60	0-100	0-100	0-100	0-60	0-60	0-60	0-60	0-100	0-100	0-60	0-60	0-60	0-100	0-50	0-60	0-40 / 0-50
Diameter (mm)	16	16	16	16	16	12	8	3	12	12	12	16	12	3	12	3	8	12	16	12
Length (mm)	150	150	150	155	150	198	283	185	203	150	150	150	198	185	203	291	283	150	190	210
pH Sample Conditions																				
Aqueous Solution																				
Conductivity																				
High (approx. 5 S/m)	✓	✓	✓	✓	✓	✓	✓	–	–	–	–	✓	✓	–	★	–	✓	–	–	–
Normal (over 100mS/m)	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	–
Low (approx.10 ~100 mS/m)	–	–	★	–	–	–	–	–	★	–	–	–	–	–	✓	–	–	–	–	–
Very low (approx. 5 ~100 mS/m)	–	–	✓	–	–	–	–	–	★	–	–	–	–	–	✓	–	–	–	–	–
Strong alkaline (pH 10-12)	–	–	–	–	★	✓	✓	–	–	✓	–	–	✓	–	✓	–	✓	–	–	–
Strong acidity (pH 0-2) *except HF sample	–	–	–	★	–	★	–	–	–	–	–	–	★	–	–	–	–	–	–	–
Quick heat change (within 50°C)	★	★	★	★	★	–	–	–	–	–	–	★	–	–	–	–	–	–	–	–
High viscosity (approx. 5 Pa·S)	–	–	–	–	–	–	–	–	★	✓	–	–	–	–	★	–	–	–	–	–
Containing non-aqueous solvent	–	–	–	–	–	✓	✓	✓	★	✓	–	–	✓	✓	✓	–	✓	–	✓	–
Suspension	–	–	–	–	–	✓	✓	✓	★	–	–	–	✓	✓	★	–	✓	–	✓	–
Solid/Semisolid																				
Inside	–	–	–	–	–	–	–	–	–	–	✓	–	–	–	–	–	–	–	–	–
Surface	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	★	★	–
Sample Containers																				
Microtube/plate (> 50 µL)	–	–	–	–	–	–	–	★	–	–	–	–	–	★	–	–	–	–	–	–
Ampule (> ø4 mm)	–	–	–	–	–	–	–	★	–	–	–	–	–	★	–	✓	–	–	–	–
Micro container (> 2 mL)	–	–	–	–	–	–	✓	★	–	–	–	–	–	★	–	✓	✓	–	–	–
Tube (ID:13 mm, L:100 ~150 mm)	–	–	–	–	–	–	★	–	–	–	–	–	–	–	–	★	★	–	–	–
Beaker (10 mL ~ 1 L)	★	★	★	★	★	★	✓	✓	✓	✓	✓	★	★	✓	✓	✓	✓	✓	✓	–
Large container (> 1 L)	✓	✓	✓	✓	✓	✓	★	–	–	–	–	✓	✓	–	–	–	★	–	–	–
Petri dish	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	★	★	–
Droplet	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	★	★	–
Water																				
Pure/ion-exchange water (approx. 0.1 mS/m) /distilled water (approx. 0.5 mS/m)	–	–	–	–	–	✓	–	–	★	–	–	–	✓	–	–	–	–	–	–	★
Tap/drinking water (approx. 10 mS/m)	✓	✓	★	–	–	✓	–	–	★	–	–	✓	✓	–	✓	–	–	–	–	–
Surface water	–	–	★	–	–	✓	–	–	★	–	–	–	✓	–	✓	–	–	–	–	–
Pharmaceutical water/enviromental water/acid rain	✓	✓	✓	–	–	✓	–	–	✓	–	–	✓	✓	–	✓	–	–	–	–	–
Chemical Reagent/Solvent																				
Caustic/strong acid *except HF sample	–	–	–	★	–	★	–	–	–	–	–	–	★	–	✓	–	–	–	–	–
Hydrofluoric acid	–	–	–	★	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Surfactant	–	–	–	–	–	✓	–	–	✓	–	–	–	✓	–	★	–	–	–	–	–
Water-based paint	–	–	–	–	–	✓	–	–	✓	–	–	–	✓	–	★	–	–	–	–	–
Dye/coloring agent	–	–	–	–	–	–	–	–	✓	–	–	–	–	–	★	–	–	–	–	–
Pharmaceutical/Biological Sample																				
Protein-containing sample	–	–	–	–	–	✓	–	✓	–	✓	–	–	✓	✓	★	–	–	–	–	–
Medicinal preparation	–	–	–	–	–	–	–	✓	✓	–	–	–	–	✓	✓	–	–	–	–	–
Enzyme solution	–	–	–	–	–	–	✓	★	–	–	✓	–	–	★	–	–	✓	–	–	–
Tris buffer	–	–	–	–	–	★	–	✓	–	–	–	–	★	✓	✓	–	–	–	–	–
Suspension	–	–	–	–	–	✓	–	–	★	–	–	–	✓	–	★	–	–	–	–	–
Agar medium	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	★	★	–
Food																				
Jam	–	–	–	–	–	✓	–	–	✓	–	✓	–	✓	–	★	–	–	✓	★ (surface)	–
Meat/fish/fruit/vegetable/dough	–	–	–	–	–	–	–	–	–	–	★	–	–	–	–	–	–	✓	★ (surface)	–
Honey	–	–	–	–	–	–	–	–	★	–	–	–	–	–	–	–	–	–	✓ (surface)	–
Cheese/butter	–	–	–	–	–	–	–	–	–	–	✓	–	–	–	–	–	–	✓	✓ (surface)	–
Yogurt	✓	✓	✓	–	–	✓	–	–	–	✓	✓	✓	✓	–	✓	–	–	✓	★ (surface)	–
Beverage/Seasoning																				
Beer	✓	✓	✓	–	–	✓	–	–	★	✓	–	✓	✓	–	★	–	–	–	–	–
Milk/carbonated drink/juice/sauce/soy sauce	–	–	–	–	–	✓	–	–	✓	✓	–	–	✓	–	★	–	–	–	–	–
Mayonnaise/ketchup	–	–	–	–	–	✓	–	–	✓	–	–	–	✓	–	★	–	–	–	–	–
Cosmetic/Lotion																				
Beauty cream/mascara	–	–	–	–	–	✓	–	–	✓	–	✓	–	✓	–	★	–	–	–	–	–
Gel/soap/shampoo/hairdye lotion	–	–	–	–	–	✓	–	–	✓	–	–	–	✓	–	★	–	–	–	–	–
Emulsified liquid	–	–	–	–	–	✓	–	–	★	–	–	–	✓	–	✓	–	–	–	–	–

pH Electrodes

ToupH Standard Electrodes

Tougher, Faster and Highly Accurate

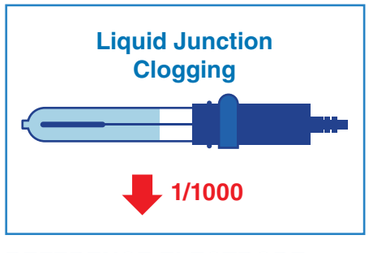
By integrating three key technologies, the ToupH standard electrodes combine enhanced toughness and faster response times with high accuracy, improved stability with minimal drift and exceptional ease of use.



pH FAST RESPONSE GLASS MEMBRANE

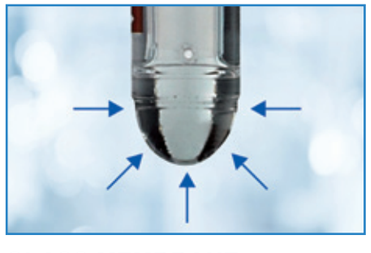
(US Patent 8262877)

The membrane contains HORIBA's unique combination of rare earth metals to improve response time by twofold and to increase durability against chemical attack.



REFERENCE ELECTRODE WITH INCREASED STABILITY

Liquid junction clogging by silver ions and silver complex ions is reduced to 1/1000 of the conventional technology. Furthermore, maintained internal solution concentration ensures a stable standard electrical potential.



GLASS MEMBRANE MOLDING TECHNOLOGY

ToupH standard electrodes demonstrate a strength up to 10 times greater than the Japanese Industrial Standards (JIS) in strength tests. Additionally, their dome-shaped construction enhances durability by reinforcing strength in all directions.

ToupH pH COMBINATION ELECTRODES

9415-10C ToupH Standard Electrode

3200611623

For General Laboratory Application

Perfect for preparing pH buffers and other aqueous test solutions

The electrode offers quick stability and drift reduction.

- Constructed with responsive glass that is 10 times stronger than JIS standards
- The one-touch refilling port slider allows one-hand operation
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-100	Ceramic	151 mm	12 mm	BNC

9481-10C ToupH Sleeve Electrode

3200611631

For High Viscosity Application

For measurement of highly viscous samples and samples containing non-aqueous solvents (e.g., cosmetics, paints)

The electrode gives stable readings in highly viscous samples.

- The liquid junction is designed with a movable sleeve that can be cleaned easily and prevents clogging
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-60	Movable sleeve	151 mm	12 mm	BNC

9418-10C ToupH Micro Electrode

3200611627

For Precious Trace Amount Sample

Suitable for low-volume samples and wide range of aqueous solutions

The electrode can measure samples as small as 50µL.

- Compatible with extremely small containers (e.g., micro tubes)
- Temperature sensor is placed next to the bulb for quick response
- Waterproof

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-60	Ceramic	151.5 mm	3 mm	BNC

9480-10C ToupH Long Electrode

3200611628

For Large Containers and Long Test Tubes

For measuring samples (e.g., microbial culture fluids) in test tubes and tall beakers

The long, thin body of the electrode is perfect for large containers and test tubes.

- 283mm length, 8mm diameter
- Constructed with responsive glass that is 10 times stronger than JIS standards
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-100	Ceramic	251 mm	8 mm	BNC

ToupH 3-IN-1 pH GLASS BODY ELECTRODES

9615S-10D ToupH Standard Electrode

3200585428

For General Laboratory Application

Perfect for preparing pH buffers and other aqueous test solutions

The electrode offers quick stability and drift reduction

- Constructed with responsive glass that is 10 times stronger than JIS standards
- The one-touch refilling port slider allows one-hand operation

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-100	Ceramic	151 mm	12 mm	BNC & phono jack

9681S-10D ToupH Sleeve Electrode

3200585463

For High Viscosity Application

For measurement of highly viscous samples and samples containing non-aqueous solvents (e.g. cosmetics, paints)

The electrode gives stable readings in highly viscous samples.

- The liquid junction is designed with a movable sleeve that can be cleaned easily and prevents clogging
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-60	Movable sleeve	151 mm	12 mm	BNC & phono jack

9618N-10D ToupH Micro Electrode

3200991595

For Precious Trace Amount Sample

Suitable for low-volume samples and a wide range of aqueous solutions.

The electrode can measure samples as small as 50 µL.

- Compatible with extremely small containers (e.g. micro tubes)
- Temperature sensor is placed next to the bulb for quick response
- Waterproof

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-60	Ceramic	151.5 mm	3 mm	BNC & phono jack

9680S-10D ToupH Long Electrode

3200585455

For Large Containers and Long Test Tubes

For measuring samples (e.g. microbial culture fluids) in test tubes and tall beakers

The long, thin body of the electrode is perfect for large containers and test tubes.

- 283mm length, 8mm diameter
- Constructed with responsive glass that is 10 times stronger than JIS standards
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-100	Ceramic	251 mm	8 mm	BNC & phono jack

pH Combination Electrodes

HORIBA pH Combination electrodes manufactured with 1 meter cable terminating in BNC connector allow these electrodes to be used with any pH meter[1]. Enjoy the full spectrum of features and benefits of these electrodes on your existing pH meter[1]. (For applications where temperature measurement and compensation is required, please refer to the 3-in-1 pH electrodes).

[1] pH meters must have BNC connector

9425-10C Standard Plastic Electrode

3200611625

For General Field Application

For measurement of tap water and drinking water

The electrode has plastic body, which is ideal for field measurement.

- Can be submerged up to 1 m depth and 30 mins (with refilling port closed)
- Waterproof, Pb-free glass
- Recommended for field use

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-100	Ceramic	150 mm	16 mm	BNC

6069N-10C Long Electrode

3200995147

For Surface and Shallow Sample Measurement

For measuring samples in slender tubes (e.g., NMR test tube)

The long, thin body of the electrode is perfect for surface and shallow sample measurement.

- 291 mm length, 3 mm diameter
- Waterproof

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-60	Ceramic	291 mm	3.15 mm	BNC

6261-10C Flat Electrode

3014081807

For Surface and Shallow Sample Measurement

Perfect for measuring samples in shallow containers (e.g., petri dishes), gelatinous materials (e.g., nutrient agar), and surface measurement of meat, paper, skin, and cloth

The sensor is located on the flat surface of the tip.

- Measurement can be made from minute amount of moisture on solid sample surface
- Pure water can be applied for samples with no moisture
- Waterproof

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-12	0-50	Sleeve	150 mm	12 mm	BNC

3-in-1 pH Glass Body Electrodes

HORIBA pH Combination electrodes[2] with an integrated thermistor offer higher accuracy as these electrodes measure temperature concurrently with pH. The pH meter is able to continuously monitor and compensate for temperature effects automatically.

[2] Only compatible with HORIBA pH meters

6252-10D Needle Electrode

3014080850

For Food Application

Needle electrode allows measurement of food samples and aqueous solutions

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-60	Ceramic	150 mm	16 mm	BNC

6367N-10D Standard Sleeve Electrode

3200991603

For Measuring pH at High Accuracy

Uses a sleeve at the liquid junction for improved stability and repeatability.

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-60	Sleeve	150 mm	12 mm	BNC & phono jack

3-in-1 pH Plastic Body Electrodes

Designed for portability, durability, and ease of use, 3-in-1 plastic-body pH electrode is the perfect companion for fieldwork. With an integrated pH sensor, reference electrode, and temperature sensor, it delivers accurate, temperature-compensated readings in a single probe—no extra equipment needed.[2]

[2] Only compatible with HORIBA pH meters

9651-10D Gel-filled pH Electrode

3200642020

For General Field Application

Recommended for field use

The plastic body of the electrode is filled with gel electrolyte. Less maintenance is needed as refilling is not required.

- Can be submerged up to 1m depth of water for 30mins.
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-80	Porous sintered polyethylene	150 mm	16 mm	BNC & phono jack

9652-10D/9652-20D Gel-filled pH Electrode

3200786359 / 3200786361

For General Field Application

Recommended for field use

The plastic body of the electrode is filled with gel electrolyte. Less maintenance is needed as refilling is not required.

- Can be submerged up to 1 m depth of water for 30 mins
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-80	Porous sintered polyethylene	150 mm	16 mm	BNC & phono jack

9625-10D / 9625-20D / 9625-30D Standard Plastic Electrode

3200360505 / 3200393025 / 3200393026

For General Field Application

Recommended for field use and measurement of tap water and drinking water

The electrode has a plastic body which is ideal for field measurement.

- Can be submerged up to 1 m depth of water for 30 mins (with refilling port closed)
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-100	Ceramic	150 mm	16 mm	BNC & phono jack

9631-10D Hydrofluoric Acid Resistant Electrode

3200524119

For Measuring Hydrofluoric Acid and Etching Drain Water

Suitable for drain water measurement after etching process

The electrode can measure 1% hydrofluoric acid solution (at 25°C, immersed at 1min.) for about 1000 times.

- Rolled glass design for long-term reliable measurement and easy maintenance
- Compliant with Japan's Measurement Act Certification
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
2-12	0-60	Ceramic	155 mm	16 mm	BNC & phono jack

9632-10D Strong Alkali Resistant Electrode

3200524120

For Stable pH Measurement in Strong Alkali Solutions

Suitable for strong alkali samples such as plating solutions

The alkali-resistant glass membrane has higher resistance and longer stability (about 5X in 0.1mol/L sodium at 60°C, pH 13) than conventional electrodes.

- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-100	Ceramic	150 mm	16 mm	BNC & phono jack

9630-10D Standard Plastic Electrode

3200528726

For Tap Water

Suitable for tap water measurement and quality control in water purification plant

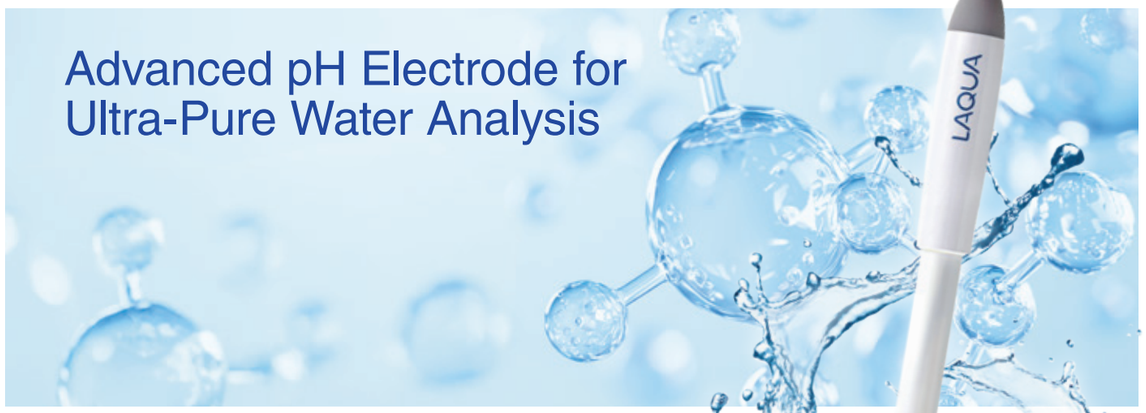
Recommended to use with cleaning solution 230

The electrode can measure samples with low conductivity or buffering capacity.

- Made of high purity multicomponent lithium series glass
- Waterproof, Pb-free glass

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-100	Ceramic	150 mm	16 mm	BNC & phono jack

PUREIL Electrode



What is PUREIL?

The 9600-10D PUREIL is an innovative pH electrode featuring newly developed gelled ionic liquid technology for the reference electrode's liquid junction. This breakthrough design eliminates potassium chloride (KCl) leakage, making it ideal for accurate pH measurement in low ionic strength solutions where conventional electrodes fail.

Conventional Electrode VS PUREIL Electrode

KCl solution electrolyte	**Salt Bridge Technology**	Gelled ionic liquid
KCl leaks into sample	**Sample Contamination**	No KCl exposure
Inaccurate, pH drift over time	**Low Conductivity Performance**	Stable, accurate readings
Slower stabilization	**Response Time**	Faster response and stabilization
Variable, affected by KCl diffusion	**Junction Potential Stability**	Very stable liquid junction potential
Limited, reacts with K^+/Cl^- sensitive samples	**Sample Compatibility**	Compatible with KCl-reactive solutions
Regular cleaning and refilling	**Maintenance Requirements**	Maintenance-free operation
Manual or separate sensor	**Temperature Compensation**	Integrated automatic compensation
Poor performance < 100 µS/cm	**Conductivity Range**	Optimized for < 100 µS/cm
Basic	**Mounting Options**	Includes sensor holder for stand mounting

9600-10D PUREIL Electrode

3200358859

For Low Conductivity Water and Solutions Reacting with KCl

Ideal for low conductivity water (< 100 uS/cm) such as pure water samples (e.g. distilled water, deionized water, rain water, reverse osmosis water, boiler water) and solutions that react with KCl or contain ions that form precipitates with potassium or chloride ions such as drug injection solution.
Uses a reference electrode equipped with gelled ionic liquid that does not leak potassium chloride (KCl).

pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	0-40	PVDF-HFP, ionic liquid	210 mm	12 mm	BNC & phono jack

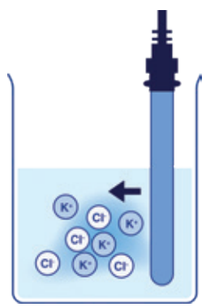
PERFORMANCE FEATURES

- Stable liquid junction potential
- Faster response time
- Accurate pH measurement in challenging samples
- Minimal ionic liquid dissolution during measurement

DESIGN FEATURES

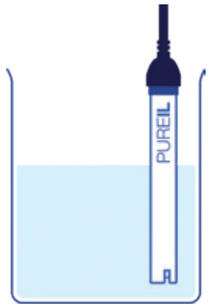
- Maintenance-free operation
- Waterproof construction
- Integrated temperature sensor for automatic temperature compensation
- Includes sensor holder for electrode stand mounting

CONVENTIONAL pH ELECTRODE



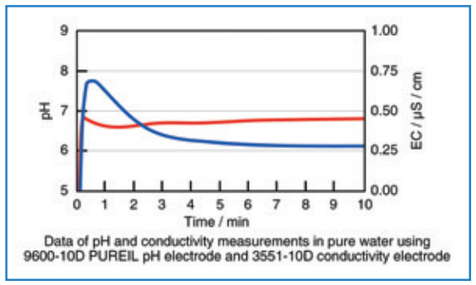
3.33M KCl diffuses into the sample

9600-10D PUREIL PH ELECTRODE



Only slight dissolution of ionic liquid

(< 1/10000 of conventional pH electrode in terms of concentration)



Data of pH and conductivity measurements in pure water using 9600-10D PUREIL pH electrode and 3551-10D conductivity electrode

ISFET Electrode

What is ISFET?

ISFET (Ion Sensitive Field Effect Transistor) is a semiconductor-based sensor technology developed by HORIBA through years of dedicated research and continuous improvement. Unlike traditional glass electrodes, ISFET uses a semiconductor response membrane, making it suitable for environments where glass cannot be used.

More than just being “unbreakable,” this innovation enables new measurement possibilities that were previously impossible with conventional electrode technology.

Durability & Safety

- Crack-resistant and unbreakable design
- Easy handling and maintenance — simply clean with a toothbrush
- Can be stored dry

Superior Measurement Capabilities

- Flat, miniature design enables measurement of extremely small samples
- Less than 100µm distance between housing and sensor
- Measures trace sample droplets and solid sample surfaces
- Prevents bubble trapping when measuring samples in beakers

Enhanced Reliability

- HORIBA’s unique sensor structure with enhanced electrostatic protection
- Significantly reduced static electricity effects (previously the main weakness of semiconductor sensors)
- More reliable and comfortable measurements

0040N-10D ISFET General pH Electrode

3200862858

Perfect for measuring samples in shallow containers (e.g., petri dishes) and gelatinous materials (e.g., nutrient agar). For surface measurement of meat, paper, skin, and cloth.

The sensor is located on the flat surface of the tip (<100µm from the housing).

- Measurement can be made from minute amount of moisture on solid sample surface
- Pure water can be applied for samples with no moisture
- Use of semiconductor sensor prevents damage such as crack or breakage
- Waterproof
- Comes with replacement sensor ISFET tip 0141N

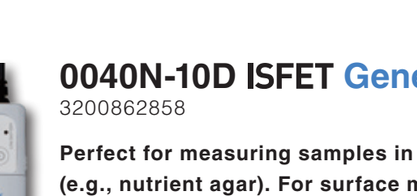
pH range	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
0-14	Sensor: 0 to 60 °C, Converter: 0 to 40 °C	Porous sintered polyethylene	190 mm	16 mm	BNC & phono jack

0141N Replacement ISFET electrode tip for 0040N-10D

3200862632

- Length: 86.1 mm
- Diameter: 16 mm

Sectional drawing of a tip of Flat ISFET



ORP and DO Electrodes

ORP and DO Electrodes

3-IN-1 ORP Electrodes

HORIBA ORP electrodes have flat platinum tip that allows measurement of low-volume samples and thermistor that ensures accurate temperature reading during ORP measurement.

9300-10D Standard ORP Electrode

3014046710

For General Laboratory Application

- Waterproof
- Refillable with 3.33M KCl

Electrode Material	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
Pt / Glass	0-60	Ceramic	150 mm	12 mm	BNC & phono jack

9301-10D Gel-filled ORP Electrode

3200922105

For General Field Application

- Waterproof
- Maintenance-free

Electrode Material	Operating temperature range (°C)	Liquid junction	Length	Diameter	Connector
Pt / Plastic	0-80	Porous sintered polyethylene	110 mm	16 mm	BNC & phono jack

DO Electrodes

HORIBA Dissolved Oxygen (DO) electrodes are galvanic probes with integrated temperature sensors. With galvanic DO probes, calibration can be performed immediately and in air. The HORIBA DO probes use unique and innovative tips which are replaceable. There is no need to replace membranes or refill electrolytes.

9521-10D DO Electrode

3200891722

For General Laboratory Application

- Waterproof
- For lab BOD measurements
- Fitted with rotor and adapter
- Comes with replaceable DO tip 7544

Response Time	Measurement range	Operating temperature range (°C)	Length	Diameter	Connector
20 seconds*	0-20.00mg/L DO	0-50	183 mm	15.6 mm	BNC & phono jack

7544 Replacement DO electrode tip for 9521-10D

3200891724

- Length: 43 mm
- Diameter: 15 mm

9551-20D / 9551-100D DO Electrode

3014047090 / 3014047091

For General Field Application

- Rugged housing with 2m or 10m cables available for configuration
- Waterproof
- Comes with replaceable DO tip 5401

Response Time	Measurement range	Operating temperature range (°C)	Length	Diameter	Connector
30 seconds*	0-19.99mg/L DO	0-40	165 mm	32 mm	BNC & phono jack

5401 Replacement DO electrode tip for 9551-20D and 9551-100D

3201055578

- Length: 23 mm
- Diameter: 24 mm

9552-20D / 9552-50D DO Electrode

3200780939 / 3200780941

For General Field Application

- Rugged housing with 2m or 5m cables available for configuration
- Waterproof
- Comes with replaceable DO tip 5402

Response Time	Measurement range	Operating temperature range (°C)	Length	Diameter	Connector
30 seconds*	0-20.00 mg/L DO	0-50	165 mm	30 mm	BNC & phono jack

5402 Replacement DO electrode tip for 9552-20D and 9552-50D

3200781553

- Length: 19 mm
- Diameter: 21 mm

*90% response time at constant temperature

Conductivity Electrode Cells

Conductivity Electrode Cells

HORIBA Conductivity cells offer **Submersible** and **Flow Type** configurations with cell constants from 0.1 to 10.0. Most models include integrated temperature sensors and feature durable stainless steel or platinum/titanium construction suitable for corrosive applications including acids and seawater. Simple maintenance involves soaking in deionized water, and the 9371-10D model is compatible with glass flow cells.

Conductivity Electrode Cells

SUBMERSIBLE TYPE*

3551-10D Conductivity Cell

3014081712

For Low Conductivity Water (e.g., deionized, distilled)

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 50 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
0.1 cm^{-1}	0.1 µS/cm - 10 mS/cm	0-60	Built-in	175 mm	23 mm	BNC & phono jack
10 m^{-1}	10 µS/m - 1 S/m	0-60	Built-in	175 mm	23 mm	BNC & phono jack

3552-10D Conductivity Cell

3014081545

For General Application

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 15 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
1 cm^{-1}	1 µS/cm - 100 mS/cm	0-100	Built-in	150 mm	12 mm	BNC & phono jack
100 m^{-1}	0.1 mS/m - 10 S/m	0-100	Built-in	150 mm	12 mm	BNC & phono jack

3553-10D Conductivity Cell

3014081714

For High Conductivity Water

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 50 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
10 cm^{-1}	10 µS/cm - 1 S/m	0-60	Built-in	175 mm	28 mm	BNC & phono jack
1000 m^{-1}	1 mS/m - 100 S/m	0-60	Built-in	175 mm	28 mm	BNC & phono jack

9371-10D Conductivity Cell

3200878882

For Low Conductivity Water and Ultra-Pure Water

- Cell Material: Stainless Steel
- Minimum sample volume: 20-30 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
0.1 cm^{-1}	0.01 µS/cm - 500 µS/cm	0-100	Built-in	180 mm	16 mm	BNC & phono jack
10 m^{-1}	1 µS/m - 50 mS/m	0-100	Built-in	180 mm	16 mm	BNC & phono jack

9382-10D Conductivity Cell

3014046709

For General Application

- Cell Material: Ti-Pt black / Plastic
- Waterproof
- Minimum sample volume: 20-30 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
1 cm^{-1}	1 µS/cm - 100 mS/cm	0-80	Built-in	150 mm	16 mm	BNC & phono jack
100 m^{-1}	0.1 mS/m - 10 S/m	0-80	Built-in	150 mm	16 mm	BNC & phono jack

9383-10D Conductivity Cell

3200780927

For General Application

- Cell Material: Ti-Pt black / Plastic
- Waterproof
- Minimum sample volume: 20-30 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
1 cm^{-1}	1 µS/cm - 100 mS/cm	0-80	Built-in	150 mm	16 mm	BNC & phono jack
100 m^{-1}	0.1 mS/m - 10 S/m	0-80	Built-in	150 mm	16 mm	BNC & phono jack

FLOW TYPE*

3561-10D Conductivity Cell

3014082350

For Low Conductivity Water (e.g., Deionized, Distilled)

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 10 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
0.1 cm^{-1}	0.1 µS/cm - 10 mS/cm	0-60	Built-in	143 mm	18 mm	BNC & phono jack
10 m^{-1}	10 µS/m - 1 S/m	0-60	Built-in	143 mm	18 mm	BNC & phono jack

3562-10D Conductivity Cell

3014082513

For General Application

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 16 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
1 cm^{-1}	1 µS/cm - 100 mS/cm	0-60	Built-in	205 mm	18 mm	BNC & phono jack
100 m^{-1}	0.1 mS/m - 10 S/m	0-60	Built-in	205 mm	18 mm	BNC & phono jack

3573-10C Conductivity Cell

3014082590

For High Conductivity Water

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 4 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
10 cm^{-1}	10 µS/cm - 1 S/m	0-60	—	222 mm	18 mm	BNC
1000 m^{-1}	1 mS/m - 100 S/m	0-60	—	222 mm	18 mm	BNC

3574-10C Conductivity Cell

3014082592

For Small Volume Sample (e.g., Column Chromatography)

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 0.25 ml

Cell Constant	Measurement Range	Operating temperature range (°C)	Thermistor	Length	Diameter	Connector
10 cm^{-1}	10 µS/cm - 100 mS/cm	0-60	—	136 mm	66 mm	BNC
1000 m^{-1}	1 mS/m - 10 S/m	0-60	—	136 mm	66 mm	BNC

* Material: All have platinum-platinum black / glass-body, except 9382-10D and 9383-10D (titanium-platinum black / plastic-body) and 9371-10D (stainless steel).

Combination ISE

Ion-selective electrodes measure specific ion concentrations using variable-potential technology with reference electrodes. HORIBA offers a comprehensive range backed by extensive field experience. Calibration with standard solutions enables direct concentration readings, though measurements require fixed temperature conditions due to temperature-dependent detection levels.

Combination ISE*

5002S-10C Ammonia (NH_3) Electrode

3200698386

Applications:
- Agriculture
- Soil
- Power station water
- Fish tanks
- Sea water
- Waste water
- Plating baths
- Air / stack gases
- Biological cultures or samples

Accessories Include:
- 3 pcs membrane caps
- 1 1000 mg/L ammonium ion standard solution (50 ml)
- 1 100 mg/L ammonium ion standard solution (50 ml)
- 1 ammonia electrode filling solution (50 ml)
- 1 syringe
- 1 dropper
- 1 protective pipe
- 1 manual

Selection Coefficient:
—

pH range	Measurement Range	Operating temperature range (°C)	Length	Diameter	Connector
pH 12 or more	0.01 - 18,000 mg/L NH_4^+ (5 x 10^{-7} to 1 mol/L NH_4^+)	0-50	150 mm	15 mm	BNC

Accessories and Solutions

Ammonia Electrode Membrane Caps
(3 Replacement Membrane Caps for 5002S-10C electrode)
3200705774

500-NH3-IFS
(Ammonia Electrode Filling Solution)
3200697173

500-NH4-SL
(100 mg/L Ammonium Ion Standard Solution)
3200697172

500-NH4-SH
(1000 mg/L Ammonium Ion Standard Solution)
3200697171

500-NH3-ISA
(Ammonia Ionic Strength Adjustor)
3200697174

6583S-10C Calcium Ion (Ca^{2+}) Electrode

3200697410

Applications:
- Agriculture / plant tissue
- Soil
- Water softening systems
- Boiler feed water
- Drinking / mineral water
- Biological cultures
- Dental / clinical analysis
- Dairy / food / beverages

Accessories Include:
- 2pcs calcium electrode tips
- 1 1000 mg/L calcium ion standard solution (50 ml)
- 1 100 mg/L calcium ion standard solution (50 ml)
- 1 calcium electrode filling solution (50 ml)
- 1 calcium ionic strength adjustor (50 ml)
- 1 syringe
- 1 dropper
- 1 protective pipe
- 1 manual

Selection Coefficient:
- Fe^{3+} = 0.1
- Fe^{2+}, Zn^{2+} = 1
- Sr^{2+} = 50
- Ni^{2+}, Cu^{2+} = 70
- Co^{2+} = 350
- Mn^{2+} = 500
- Mg^{2+} = 1,000
- Na^+, K^+, Ba^{2+}, NH_4^+ = over 1,000

pH range	Measurement Range	Operating temperature range (°C)	Length	Diameter	Connector
4.0 mg/L (10^{-4} mol/L) Ca^{2+}, pH 5 to 11	0.4 - 40,080 mg/L Ca^{2+} (10^{-5} to 1 mol/L Ca^{2+})	0-50	150 mm	16 mm	BNC

Accessories and Solutions

7683S Calcium Ion Electrode Tip
(Replacement Electrode Tip for 6583S-10C electrode)
3200697414

500-CA-IFS
(Calcium Electrode Filling Solution)
3200697177

500-CA-SL
(100ppm Calcium Ion Standard Solution)
3200697176

500-CA-SH
(1000ppm Calcium Ion Standard Solution)
3200697175

500-CA-ISA
(Calcium Ionic Strength Adjustor)
3200697178

* Note: Refer to page 42 for detailed information on standard solutions, ISAs and filling solutions

6560S-10C Chloride Ion (Cl^-) Electrode

3200697407

Applications:

- Agriculture
- River / tap water
- Plant tissue
- Soils
- Boiler feed water
- Clinical analysis
- Sweat
- Urine
- Cement
- Plating baths
- Dairy / food / beverage samples

Accessories Include:

- 1 chloride electrode tip
- 1 1000 mg/L chloride ion standard solution (50 ml)
- 1 100 mg/L chloride ion standard solution (50 ml)
- 1 syringe
- 1 dropper
- 1 protective pipe
- 1 water-resistant abrasive sheet
- 1 manual

Selection Coefficient:

- $S_2O_3^{2-}$, S^{2-}, I^-, Ag^+, Hg^{2+} = Not acceptable
- SCN^- = 0.3
- MnO_4^- = 0.1
- Br^- = 0.03
- NO_3^-, F^-, HCO_3^-, SO_4^{2-}, PO_4^{2-} = 1,000

pH range	Measurement Range	Operating temperature range (°C)	Length	Diameter	Connector
350 mg/L (10^{-2} mol/L) Cl^-, pH 3 to 11	0.35 - 35,000mg/L Cl^- (10^{-5} to 1 mol/L Cl^-)	0-50	150 mm	16 mm	BNC

Accessories and Solutions

7660S Chloride Ion Electrode Tip
(Replacement Electrode Tip for 6560S-10C electrode)
3200697411

500-CL-IFS
(Chloride Electrode Filling Solution)
3200697169

500-CL-SL
(100 ppm Chloride Ion Standard Solution)
3200697168

500-CL-SH
(1000 ppm Chloride Ion Standard Solution)
3200697167

500-CL-ISA
(Chloride Ionic Strength Adjustor)
3200697170

6561S-10C Fluoride Ion (F^-) Electrode

3200693774

Applications:

- Dental / toothpaste / mouthwash
- Drinking / seawater
- Wastewater
- Air / stack gases
- Acids
- Soils
- Food
- Biological fluids
- Plant tissue
- Coal
- Carbonated beverages
- Bone

Accessories Include:

- 1 fluoride electrode tip
- 1 1000 mg/L fluoride ion standard solution (50 ml)
- 1 100 mg/L fluoride ion standard solution (50 ml)
- 1 fluoride electrode filling solution (50 ml)
- 1 fluoride ionic strength adjustor (50 ml)
- 1 dropper
- 1 protective pipe
- 1 manual

Selection Coefficient:

- Possible interference when multiply-charged ion (ex. Al^{3+}, Fe^{3+}) coexisted and foamed the complex

pH range	Measurement Range	Operating temperature range (°C)	Length	Diameter	Connector
0.1 to 1,000 mg/L F^-, pH 5 to 8	0.02 - 19,000 mg/L F^- (10^{-6} to 1 mol/L F^-)	0-50	150 mm	16 mm	BNC

Accessories and Solutions

7661S Fluoride Ion Electrode Tip
(Replacement Electrode Tip for 6561S-10C electrode)
3200693606

500-F-IFS
(Fluoride Electrode Filling Solution)
3200697165

500-F-SL
(100 mg/L Fluoride Ion Standard Solution)
3200697164

500-F-SH
(1000 mg/L Fluoride Ion Standard Solution)
3200697163

500-F-TISAB
(Fluoride Ionic Strength Adjustor)
3200697166

* Note: Refer to page 42 for detailed information on standard solutions, ISAs and filling solutions

6581S-10C Nitrate Ion (NO_3^-) Electrode

3200697408

Applications:

- Agriculture
- River / Tap Water
- Plant Tissue
- Soils
- Boiler Feed Water
- Clinical Analysis
- Sweat
- Urine
- Cement
- Plating Baths
- Dairy / Food / Beverages Samples

Accessories Include:

- 2pcs nitrate electrode tip
- 1 1000 mg/L nitrate ion standard solution (50 ml)
- 1 100 mg/L nitrate ion standard solution (50 ml)
- 1 nitrate electrode filling solution (50 ml)
- 1 nitrate ionic strength adjustor (50 ml)
- 1 syringe
- 1 dropper
- 1 protective pipe
- 1 manual

Selection Coefficient:

- ClO_4^-, I^- = Not acceptable
- Br^- = 2
- NO_2^- = 3
- Cl^- = 300
- HCO_3^-, $H_2PO_4^-$, SO_4^{2-} = over 1000

pH range	Measurement Range	Operating temperature range (°C)	Length	Diameter	Connector
62 mg/L (10^{-3}mol/L) NO_3^-, pH 3 to 7	0.62 - 62,000 mg/L NO_3^- (10^{-5} to 1 mol/L NO_3^-)	0-50	150 mm	16 mm	BNC

Accessories and Solutions

7681S Nitrate Ion Electrode Tip
(Replacement Electrode Tip for 6581S-10C electrode)
3200697412

500-NO3-IFS
(Nitrate Electrode Filling Solution)
3200697181

500-NO3-SL
(100 mg/L Nitrate Ion Standard Solution)
3200697180

500-NO3-SH
(1000 mg/L Nitrate Ion Standard Solution)
3200697179

500-NO3-ISA
(Nitrate Ionic Strength Adjustor)
3200697182

6582S-10C Potassium Ion (K^+) Electrode

3200697409

Applications:

- Agriculture / Plant Tissue
- Soils
- Wastewater
- River / Tap Water
- Clinical Analysis
- Saliva
- Serum
- Fertilizers
- Soils
- Wines
- Dairy / Foods / Beverages

Accessories Include:

- 2pcs potassium electrode tip
- 1 1000 mg/L potassium ion standard solution (50 ml)
- 1 100 mg/L potassium ion standard solution (50 ml)
- 1 potassium electrode filling solution (50 ml)
- 1 potassium ionic strength adjustor (50 ml)
- 1 syringe
- 1 dropper
- 1 protective pipe
- 1 manual

Selection Coefficient:

- Rb^+ = 0.4
- Cs^+ = 3
- NH_4^+ = 70
- Li^+, Na^+, Mg^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+} = over 1,000

pH range	Measurement Range	Operating temperature range (°C)	Length	Diameter	Connector
3.9 mg/L (10^{-4} mol/L) K^+, pH 5 to 11	0.39 - 39,000 mg/L K^+ (10^{-5} to 1 mol/L K^+)	0-50	150 mm	16 mm	BNC

Accessories and Solutions

7682S Potassium Ion Electrode Tip
(Replacement Electrode Tip for 6582S-10C electrode)
3200697413

500-K-IFS
(Potassium Electrode Filling Solution)
3200697185

500-K-SL
(100 ppm Potassium Ion Standard Solution)
3200697184

500-K-SH
(1000 ppm Potassium Ion Standard Solution)
3200697183

500-K-ISA
(Potassium Ionic Strength Adjustor)
3200697186

* Note: Refer to page 42 for detailed information on standard solutions, ISAs and filling solutions

Sensor Head With Built-in Digital Circuit

Retains sensor and measurement information

Sensor Cartridge

Replaceable, cost efficient and environment-friendly

WQ-300 Series Smart Digital Sensors

WQ-300 Series Smart Digital Sensors

HORIBA's Smart Digital Sensor Technology

All sensor heads are offered in 2 m and 5 m cable versions.
A 10 m extension cable is also available.

IP67

WQ-300 Series Smart Digital Sensors

pH SENSORS

Maintenance-free, gel-filled pH sensor

- No electrolyte refilling required
- KCl gel electrolyte
- Double junction reference
- Porous sintered polyethylene junction
- Built-in temperature sensor
- Rugged polycarbonate body
- Replaceable pH sensor cartridge

pH Sensor Head

pH / mV / Temp (°C/°F)

Model	300PH-2	300PH-5
Part No.	**3200812206**	**3200812207**
Cable Length	2 m	5 m
pH Range	-2.00 to 20.00 pH -2.000 to 20.000 pH	
Resolution	-2.00 to 20.00: 0.01 pH -2.000 to 20.000: 0.001 pH	
Accuracy	-2.00 to 20.00: ±0.01 -2.000 to 20.000: ±0.005	
Calibration Points	Up to 6	
pH Buffer Groups	USA, DIN, NIST, NIST10, Custom	
mV Range	±1000.0 mV	
Resolution	0.1 mV	
Accuracy	±0.1 mV	
Temperature Range	-30.0 to 130.0 °C -22.0 to 266.0 °F	
Resolution	0.1 °C / °F	
Accuracy	±0.5 °C / ±0.9 °F	
Calibration Option	Yes	
Body Material	ABS / Polycarbonate	
Length and Diameter	85 x 30 mm	
Connector	Push-pull	

pH Sensor Cartridge

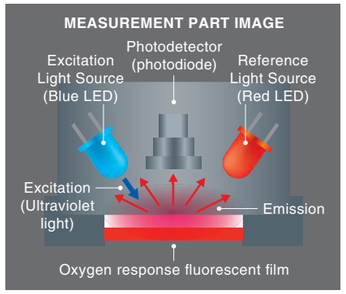
pH / mV / Temp (°C/°F)

Model	300-P-C
Part No.	**3200786363**
pH Range	-2.00 to 20.00 pH -2.000 to 20.000 pH
Temperature Range	0 to 80 °C -32.0 to 176.0 °F
Junction Material	Porous sintered polyethylene
Double Junction	Yes
Temperature Sensor	Built-in
Body Material	Polycarbonate, glass bulb
Length and Diameter	110 x 16 mm

DISSOLVED OXYGEN (DO) SENSORS

Optical dissolved oxygen (DO) sensor

- Longer usable life with excellent performance
- Easy to handle – not affected with sample flow velocity, not sensitive to hydrogen sulfide, DO sensor cap replacement after 1-2 years*
- Built-in temperature sensor
- Comes with replaceable DO sensor cap, air calibration bottle and Stainless Steel DO Sensor Protective Guard



Dissolved Oxygen Sensor

DO (mg/L, %) / O_2 / Temp (°C/°F)

Model	300-D-2	300-D-5
Part No.	**3200780940**	**3200780942**
Cable Length	2 m	5 m
Dissolved Oxygen (DO) Range	0.00 to 20.00 mg/L 0.0 to 200.0 %	
Resolution	0.01 mg/L, 0.1%	
Accuracy	±0.2 mg/L, ±2 %	
Salinity Compensation	Auto: by conductivity sensor / Manual: 0.0 to 40.0 ppt	
Barometric Pressure Compensation	Auto: by built-in barometer / Manual: 10.0 to 199.9 kPa	
Calibration Points	Up to 2	
Oxygen Range	0.0 to 50.0%	
Resolution	0.1%	
Accuracy	±0.5%	
Temperature Range	-30.0 to 130.0 °C -22.0 to 266.0 °F	
Resolution	0.1 °C / °F	
Accuracy	±0.5 °C / ±0.9 °F	
Calibration Option	Yes	
Body Material	ABS / Polycarbonate	
Length and Diameter	200 x 16 mm	
Connector	Push-pull	
Sensor cap included	1	
Warranty	3 years	

Dissolved Oxygen Sensor Cap

Model	300-D-M
Part No.	**3200781554**
Dissolved Oxygen (DO) Range	0.00 to 20.00 mg/L 0.0 to 200.0 %
Temperature Range	0 to 50.0 °C 32.0 to 122.0 °F
Body Material	PVC, PMMA
Length and Diameter	10 x 16 mm

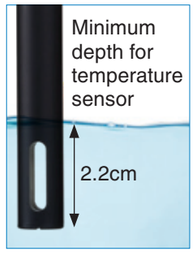
* Depending on application, handling, and maintenance

WQ-300 Series Smart Digital Sensors

CONDUCTIVITY SENSORS

2-cell & 4-cell conductivity sensors

- Wide range of conductivity measurements possible
- 2-cell conductivity sensor with flow cell is designed for ultra-pure water applications
- From clean water to industrial wastewater, the 4-cell type can measure a variety of samples with different conductivities
- Built-in temperature sensor
- Stainless steel 2-cell cartridge
- Durable epoxy / carbon body 4-cell cartridge
- Replaceable conductivity sensor cartridge




Detachable glass flow cell

Conductivity Sensor Head

EC / Sal / TDS / Res / Temp (°C/°F)

Model	300-C-2		300-C-5		
Part No.	**3200784468**		**3200812202**		
Cable Length	2 m		5 m		
	µS/cm	mS/cm	µS/cm	mS/cm	S/m
Conductivity Range	• 0.000 to 0.199 • 0.200 to 1.999 • 2.00 to 19.99 • 20.0 to 199.9 • 200 to 1999	• 2.00 to 19.99 • 20.0 to 199.9 • 200 to 2000	• 0.0 to 19.9 • 20.0 to 199.9 • 200 to 1999	• 2.00 to 19.99 • 20.0 to 199.9 • 200 to 1999	• 2.00 to 19.99 • 20.0 to 200.0
Resolution	Auto ranging, up to 4 significant digits				
Accuracy	± 0.5% full scale of each range, > 200 mS/cm (20.0 S/m): ± 1.5% full scale				
Reference Temperature	15 to 30°C				
Temperature Coefficient	0.00 to 10.00 %/°C				
Calibration Points	Up to 4 (Auto) / Up to 5 (Manual)				
Units	S/cm, S/m				
Salinity Range	0.00 to 80.00 ppt, 0.000 to 8.000 %				
Resolution	0.01 ppt, 0.001 %				
Accuracy	± 0.5% of reading or ± 0.01 ppt, whichever is greater				
Salinity Curves	NaCl, Seawater (UNESCO 1978)				
Calibration Option	Yes				
Total Dissolved Solids (TDS) Range	0.01 mg/L to 200,000 mg/L				
Resolution	0.01 minimum, 4 significant digits				
Accuracy	± 0.5% of reading or ± 0.1 mg/L, whichever is greater				
TDS Curves	Linear (0.40 to 1.00), EN27888, 442, NaCl				
	Ω•cm	kΩ•cm	MΩ•cm	Ω•cm	kΩ•cm
Resistivity Range	• 0.1 to 199.9 • 200 to 1999	• 2.00 to 19.99 • 20.0 to 199.9 • 200 to 1999	• 2.00 to 19.99 • 20.0 to 200.0	• 0.001 to 1.999 • 2.00 to 19.99 • 20.0 to 199.9 • 200 to 1999	• 2.00 to 19.99 • 20.0 to 199.9 • 200 to 2000
Resolution	Auto ranging, up to 4 significant digits				
Accuracy	± 0.5% full scale of each range, > 200 mS/cm (20.0 S/m): ± 1.5% full scale				
Temperature Range	-30.0 to 130.0 °C, -22.0 to 266.0 °F				
Resolution	0.1 °C / °F				
Accuracy	±0.5 °C / ±0.9 °F				
Calibration Option	Yes				
Body Material	ABS / Polycarbonate				
Length and Diameter	85 x 30 mm				
Connector	Push-pull				

4-Cell Conductivity Sensor Cartridge

Model	300-4C-C
Part No.	**3200780928**
Cell Constant	0.172 cm^{-1}
Conductivity Range	10 µS/cm to 2000 mS/cm
Operating Temperature Range	0 to 100 °C, 32.0 to 212.0 °F
Temperature Sensor	Built-in
Body Material	Epoxy, carbon
Length and Diameter	110 x 16 mm

2-Cell Conductivity Sensor Cartridge

Model	300-2C-C
Part No.	**3200820579**
Cell Constant	0.1 cm^{-1}
Conductivity Range	0.01 µS/cm to 500 µS/cm
Operating Temperature Range	0 to 100 °C, 32.0 to 212.0 °F
Temperature Sensor	Built-in
Body Material	Stainless steel
Length and Diameter	110 x 16 mm

ORP SENSORS

Maintenance-free, gel-filled ORP sensor

- No electrolyte refilling required
- Platinum tip attached to glass
- KCl gel electrolyte
- Porous sintered polyethylene junction
- Built-in temperature sensor
- Rugged polycarbonate body
- Replaceable ORP sensor cartridge

ORP Sensor Head

ORP / Temp (°C/°F)

Model	300-O-2	300-O-5
Part No.	**3200812204**	**3200923561**
Cable Length	2 m	5 m
ORP Range	-2000 to +2000 mV	
Resolution	< ±1000.0 mV: 0.1mV, ≥ 1000.0 mV: 1 mV	
Accuracy	< ±1000.0 mV: ±0.1 mV, ≥ 1000.0 mV: ±1 mV	
Calibration Option	Yes	
Temperature Range	-30.0 to 130.0 °C, -22.0 to 266.0 °F	
Resolution	0.1 °C / °F	
Accuracy	±0.5 °C / ±0.9 °F	
Calibration Option	Yes	
Body Material	ABS / Polycarbonate	
Length and Diameter	85 x 30 mm	
Connector	Push-pull	

ORP Sensor Cartridge

ORP / Temp (°C/°F)

Model	300-O-C
Part No.	**3200922104**
ORP Range	-2000 to +2000 mV
Temperature Range	0 to 80 °C, -32.0 to 176.0 °F
Junction Material	Porous sintered polyethylene
Double Junction	Yes
Temperature Sensor	Built-in
Body Material	Polycarbonate, platinum/glass
Length and Diameter	110 x 16 mm

WQ-300 Series Smart Digital Sensors

ION SENSORS

Compatible not only with ion cartridges, but also with combination ion-selective electrodes

- Accepts all maintenance-free ion sensor cartridges equipped with temperature sensor
- Requires 300-BNC sensor head adapter for connecting combination ion-selective electrodes

Ion Sensor Head

Ion / mV / Temp (°C/°F)

Model	300-I-2	300-I-5
Part No.	**3200812203**	**3200923560**
Cable Length	2 m	5 m
Ion Range	(mg/L, mmol/L) 0.000 to 0.999, 1.00 to 9.99, 10.0 to 99.9, 100 to 999, 1000 to 9990, 10000 to 99900	
Resolution	0.001 minimum, 3 significant digits	
Accuracy	±0.3% full scale	
Calibration Points	Up to 5	
mV Range	±1000.0 mV	
Resolution	0.1 mV	
Accuracy	±0.1 mV	
Temperature Range	-30.0 to 130.0 °C -22.0 to 266.0 °F	
Resolution	0.1 °C / °F	
Accuracy	±0.5 °C / ±0.9 °F	
Calibration Option	Yes	
Body Material	ABS / Polycarbonate	
Length and Diameter	85 x 30 mm	
Connector	Push-pull	

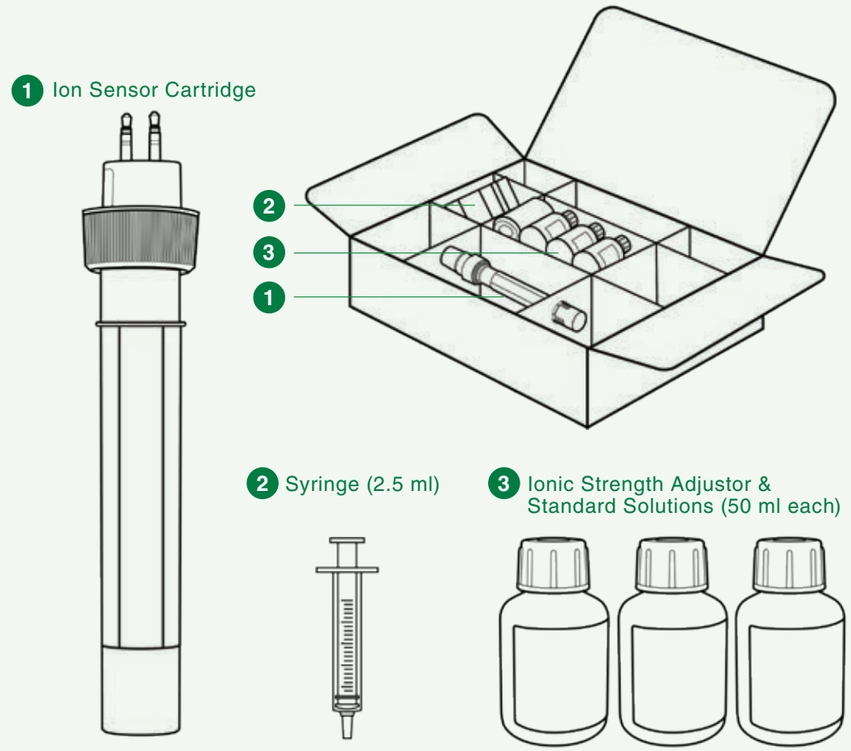
Ion Sensor Cartridge*

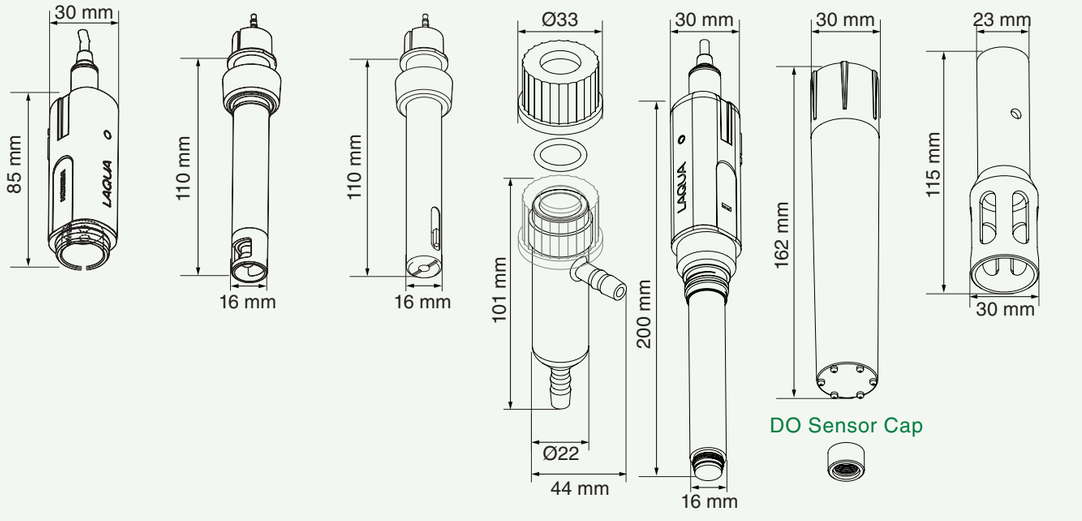
Model	300-NO3-C	300-K-C	300-CA-C	300-NA-C	300-NH4-C
Ion Sensor Cartridge	**Nitrate (NO_3^-)**	**Potassium (K^+)**	**Calcium (Ca^{2+})**	**Sodium (Na^+)**	**Ammonium (NH_4^+)**
Part No.	**3200986784**	**3200986785**	**3200986786**	**3200986787**	**3200986783**
Measurement Range	0.62 to 62,000 mg/L NO_3^- (1 x 10^{-5} to 1 mol/L NO_3^-)	0.39 to 39,000 mg/L K^+ (1 x 10^{-5} to 1 mol/L K^+)	0.4 to 40,000 mg/L Ca^{2+} (1 x 10^{-5} to 1 mol/L Ca^{2+})	0.23 to 23,000 mg/L Na^+ (1 x 10^{-5} to 1 mol/L Na^+)	0.18 to 18,000 mg/L NH_4^+ (1 x 10^{-5} to 1 mol/L NH_4^+)
Operating Temperature Range	0 to 50 °C				
pH Range	pH 4 to 7 (100 mg/L NO_3^-, 25 °C)	pH 5 to 11 (100 mg/L K^+, 25 °C)	pH 5 to 10 (100 mg/L Ca^{2+}, 25 °C)	pH 5 to 10 (100 mg/L Na^+, 25 °C)	pH 5 to 8 (100 mg/L NH_4^+, 25 °C)
Junction Material	Porous sintered polyethylene				
Double Junction	Yes				
Temperature Sensor	Built-in				
Body Material	Polycarbonate, PVC				
Length and Diameter	110 x 16 mm				

*Each ion sensor cartridge comes with 100 mg/L & 1000 mg/L ion standard solutions (50 ml each), ionic strength adjustor (50 ml), syringe and manual.

DIMENSIONS

WQ-300 Ion Sensor Cartridge Packaging





Accessories and Solutions

Accessories and Solutions

ORP Standard Solution & Powders

Part No.	Model	Description
4000047848	500-225	ORP Standard Solution 225 mV at 25°C (500 ml)
3200043618	160-51	ORP Powder 89 mV at 25°C for 250 ml (10 sachets/pack)
3200043617	160-22	ORP Powder 258 mV at 25°C for 250 ml (10 sachets/pack)

pH Buffers

Part No.	Model	Description
3999960015	501-S	NIST pH Buffers Kit (pH 4.01, 6.86, 9.18 buffers & 3.33 M KCl, 250 ml each)
3999960016	502-S	USA pH Buffers Kit (pH 4.01, 7.00, 10.01 buffers & 3.33 M KCl, 250 ml each)
3999960028	500-2	pH 1.68 Buffer at 25°C, 500 ml
3999960029	500-4	pH 4.01 Buffer at 25°C, 500 ml
3999960030	500-686	pH 6.86 Buffer at 25°C, 500 ml
3999960031	500-7	pH 7.00 Buffer at 25°C, 500 ml
3999960032	500-9	pH 9.18 Buffer at 25°C, 500 ml
3999960033	500-10	pH 10.01 Buffer at 25°C, 500 ml
3999960034	500-12	pH 12.46 Buffer at 25°C, 500 ml

Conductivity Standards

Part No.	Model	Description
3999960017	503-S	Conductivity Standards Kit (84µS/cm, 1413µS/cm, 12.88mS/cm & 111.8mS/cm, 250 ml each)
3999960035	500-21	84µS/cm Conductivity Standard at 25°C, 500 ml
3999960036	500-22	1413µS/cm Conductivity Standard at 25°C, 500 ml
3999960037	500-23	12.88mS/cm Conductivity Standard at 25°C, 500 ml
3999960038	500-24	111.8mS/cm Conductivity Standard at 25°C, 500 ml

pH/ORP Electrode Filling Solutions

Part No.	Model	Description
3999960023	525-3	3.33M KCl, 250 ml (Made in Singapore)
3200043640	300	3.33M KCl, 250 ml (Made in Japan)

pH Electrode Cleaning Solutions

Part No.	Model	Description
3014028653	220	Cleaning solution for removing inorganic sample residues from glass membrane and liquid junction, 50 ml x 2 pcs
3200530494	230	Cleaning solution for removing inorganic and organic sample residues from glass membrane, Solution A (30 ml) & Solution B (100 ml)
3200366771	250	Cleaning solution for removing proteins from glass membrane and liquid junction, 400 ml

Ion Strength Adjustors

Part No.	Model	Description
3200697174	500-NH3-ISA	Ammonia Ionic Strength Adjustor (500 ml)
3200987466	500-NH4-ISA	Ammonium Ionic Strength Adjustor (500 ml)
3200697178	500-CA-ISA	Calcium Ionic Strength Adjustor (500 ml)
3200697170	500-CL-ISA	Chloride Ionic Strength Adjustor (500 ml)
3200697166	500-F-TISAB	Fluoride Ionic Strength Adjustor (500 ml)
3200697182	500-NO3-ISA	Nitrate Ionic Strength Adjustor (500 ml)
3200697186	500-K-ISA	Potassium Ionic Strength Adjustor (500 ml)
3200987465	500-NA-ISA	Sodium Ionic Strength Adjustor (500 ml)


ORP Standard Solution 225 mV


ORP Powders


500-2 pH 1.68 Buffer

500-12 pH 12.46 Buffer


501-S NIST pH Buffers Kit


502-S USA pH Buffers Kit


503-S Conductivity Standards Kit


220 Cleaning Solution

250 Cleaning Solution


230 Cleaning Solution

Ion Standard Solutions

Part No.	Model	Description
3200697171	500-NH4-SH	1000 mg/L Ammonium Ion Standard Solution (500 ml)
3200697172	500-NH4-SL	100 mg/L Ammonium Ion Standard Solution (500 ml)
3200697175	500-CA-SH	1000 mg/L Calcium Ion Standard Solution (500 ml)
3200697176	500-CA-SL	100 mg/L Calcium Ion Standard Solution (500 ml)
3200697167	500-CL-SH	1000 mg/L Chloride Ion Standard Solution (500 ml)
3200697168	500-CL-SL	100 mg/L Chloride Ion Standard Solution (500 ml)
3200697163	500-F-SH	1000 mg/L Fluoride Ion Standard Solution (500 ml)
3200697164	500-F-SL	100 mg/L Fluoride Ion Standard Solution (500 ml)
3200697179	500-NO3-SH	1000 mg/L Nitrate Ion Standard Solution (500 ml)
3200697180	500-NO3-SL	100 mg/L Nitrate Ion Standard Solution (500 ml)
3200697183	500-K-SH	1000 mg/L Potassium Ion Standard Solution (500 ml)
3200697184	500-K-SL	100 mg/L Potassium Ion Standard Solution (500 ml)
3200987464	500-NA-SL	100 mg/L Sodium Ion Standard Solution (500 ml)
3200987463	500-NA-SH	1000 mg/L Sodium Ion Standard Solution (500 ml)

Ion Selective Electrode Filling Solutions

Part No.	Model	Description
3200697173	500-NH3-IFS	Ammonia Electrode Filling Solution (500 ml)
3200697177	500-CA-IFS	Calcium Electrode Filling Solution (500 ml)
3200697169	500-CL-IFS	Chloride Electrode Filling Solution (500 ml)
3200697165	500-F-IFS	Fluoride Electrode Filling Solution (500 ml)
3200697181	500-NO3-IFS	Nitrate Electrode Filling Solution (500 ml)
3200697185	500-K-IFS	Potassium Electrode Filling Solution (500 ml)

Accessories

Part No.	Model	Description
3200861022		Integrated Electrode Stand (Height: 383 mm) for 2000 Series
3200644455	FA-70A	Integrated Electrode Stand (Height: 338 mm) for 1000 Series
3200382557	FA-70S	Adjustable, free-standing electrode stand (Height: 384 mm)
3200382560	FA-70L	Long, free-standing electrode stand (Height: 450-650 mm)
3200373991		Arm for electrode stand FA-70A, FA-70S & FA-70L
3200373961		Electrode holders, 2 pcs/pack (for mounting electrode with round cap on electrode stand arm)
3200043508		Electrode protection caps, 5 pcs/pack
3200382482		Electrode protection cap for long electrode (for 9680S-10D, 9480-10C pH Electrode)
3200044409		Clear pH sensor tip guard (for plastic pH electrodes 9651/9652, 9625, 9630 etc.), 5 pcs/pack
3200828646		Black pH sensor tip guard (for 200 series, 300 series), 3 pcs/pack
3200897227		Stirrer set for 9521-10D
3200779640		Electrode adapter
3200821465	300-BNC	Sensor head adapter (for WQ-300 pH/ORP/Ion sensor heads)
3200844642		Glass flow cell (for 300-2C-C and 9371-10D)
3200921588	300-EXT-10	10 m sensor head extension cable


Electrode Protection Caps (5 pcs/pack)

Electrode Protection Caps for Long Electrode


Clear/Black pH Sensor Tip Guard


Stirrer Set


Electrode Adapter


300-BNC Sensor Head Adapter


Glass Flow Cell


300-EXT-10 10 m Sensor Head Exrension Cable


Calcium Ion Electrode Solutions


Chloride Ion Electrode Solutions


Fluoride Ion Electrode Solutions


Potassium Ion Electrode Solutions


Ammonia Ion Electrode Solutions


Nitrate Ion Electrode Solutions


FA-70A Integrated Electrode Stand (1000 Series)

Integrated Electrode Stand (2000 Series)


FA-70S Adjustable Electrode Stand


FA-70L Long Electrode Stand


Arm for Electrode Stand


Electrode Holders (2 pcs/pack)

Accessories and Solutions

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ASIA PACIFIC
HORIBA Instruments (Singapore) Pte Ltd
163 Kallang Way, #08-14,
Mapletree Hi-Tech Park @ Kallang Way,
Singapore 349256
(65) 6745-
laqua@horiba.com

EUROPE, MIDDLE EAST & AFRICA
HORIBA UK Limited
Kyoto Close, Moulton Park,
Northampton NN3 6FL UK
+44 1604 542 50
waterquality@horiba.com

AMERICAS
HORIBA Instruments Incorporated
9755 Research Drive, Irvine,
California 92618 USA
+1 800 446 7422
labinfo@horiba.com

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