

**HORIBA**  
Scientific

# LAQUA

Touchscreen precision.  
The new benchmark.



pH	ORP	ION	Conductivity
Resistivity	Total Dissolved Solids	Salinity	

Benchtop Water Quality Meters  
F-70/DS-70 Series



Ideas for you

# Our concept originated from you

- “Meters and electrodes become dirty so often, I wish I could keep them clean all the time.”
- “It would be great if I could quickly visualize the calibration and measurement results, as well as the status of the electrodes.”
- “If a problem occurs, I want it solved immediately!”
- “It’s a pain to have to look through the instruction manual.”
- “Electrode stands are actually not that user-friendly.”
- “I want the electrode stand to move freely according to the location and what I’m using it for.”
- “Robust with high precision.”
- “Which electrode actually matches my need?”
- “I want stable measurements every day.”

We listened closely to each of our customers’ comments, and applied what we heard to our next generation analyzer. HORIBA is proud to announce LAQUA, the water quality analyzer that answers all of your needs.



# LAQUA

- ▶ Stress free operation / Smart navigation ..... P03~05
- ▶ Essence of technology New pH electrode ..... P06~08
- ▶ Product selection guide and packages meter + electrode ..... P09~10

LAQUA Our promise | We want to respond flexibly to your analysis needs. Containing a word “water” in Latin, our commitment to provide everything you expect from a water quality analyzer is distilled in our new brand, LAQUA.



# Intuitive and easy to use touch panel operation

Intuitive control with the large capacitive touch panel. Smart navigation provides step-by-step guidance for trouble-free operation. Easy to clean glass top and round body, LAQUA is both easy and fun to use!

## SMART

Operation buttons are reduced to the bare minimum

CAL

MEAS

DATA



Calibration

Measurement

Data Management



Simply slide your finger across the screen to switch displays

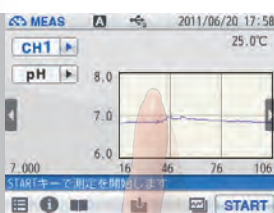
Switch between digital, graphic, and analog displays during measurement with just the flick of a finger. No need for complex actions.

2-channel simultaneous measurement and display

pH value and a second measurement (such as ORP, ion, electrical conductivity) can be displayed simultaneously.



Digital



Graph



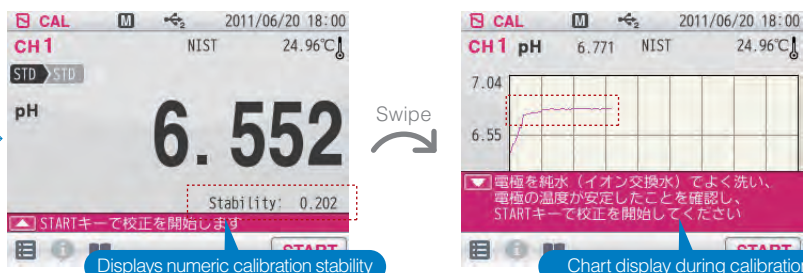
Analog

## Accurate calibration for measurement precision.

Correct calibration is done under "stable" conditions. Calibration performed under unstable conditions is one of the big causes of measurement error. Calibration response is visualized as numerical data or a graph. With LAQUA, you are sure about your calibration validity

### Calibration Assistance Function

You can tell measurement value has stabilized when the graph has stabilized and the calibration stability values become smaller. "Stability" checking at a glance!



## NAVIGATION

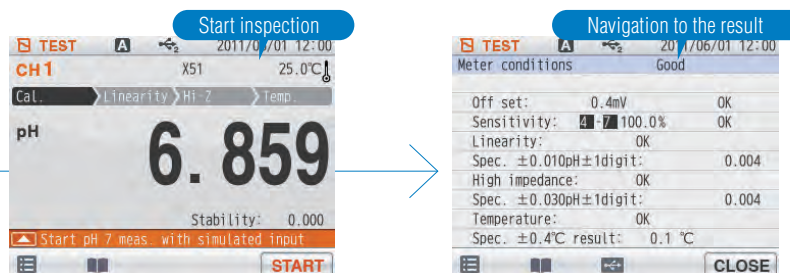
Experience  
LAQUA on  
the WEB

[www.horiba.com/laqua](http://www.horiba.com/laqua)

Enjoy hassle-free operation with on-screen settings confirmation, maintenance information, and troubleshooting tips

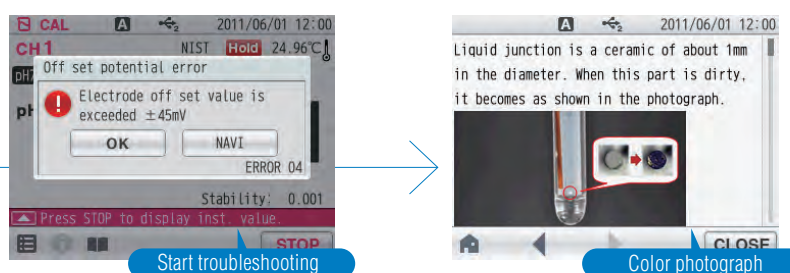
### Inspection Navigation

Easy navigation for meter and electrode inspections. Various industrial standards (JIS, USP, EP, JP, CP) are also supported.



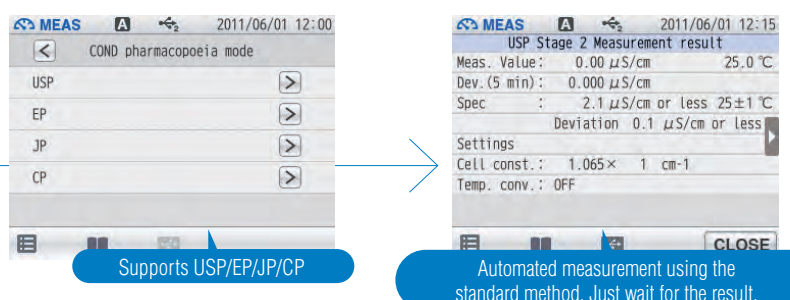
### Troubleshooting Navigation

On-screen support for resolving a problem that occurs during calibration or sample measurements. A user's guide is incorporated in the software to assist with any operational difficulties.



### Application Functions

Various industry standard methods are supported by the instrument. Conductivity measurement for several country pharmaceutical pure water guidelines are incorporated with the meter.



#### Full-Range of Functions for Validation and Usability

(For compatible models please see the P14 body specification.)

- Customizable auto hold function for calibration and measurement
- Periodic inspection mode: JIS/Pharmacopoeias/Digital Simulator
- Digital memory: Maximum 2,000 sets of measurement data can be recorded (999 sets for F-71/F-74BW/DS-71 models)
- Simultaneous connection to a GLP/GMP compatible printer and PC
- Customizable print function
- Save data onto a USB flash drive
- USB PC Communication: Data storage software available as a free download for registered users.
- Multi-language support (Japanese, English, Chinese, Korean)
- FDA21CFR Part 11 (Please ask for quotation)



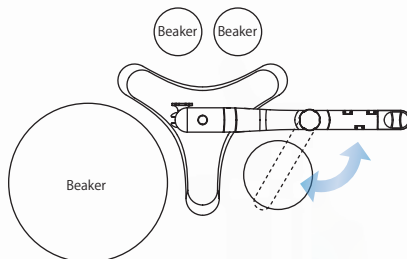
## LAQUA's free arm electrode stand can handle any container size or position.

The stand-alone free arm electrode stand can be moved wherever you like, vertically or horizontally.

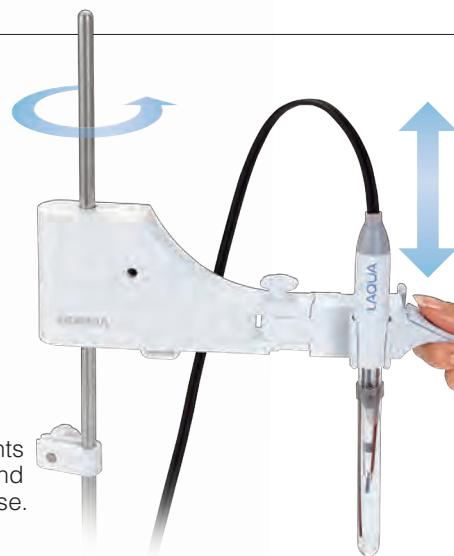
You can also use the long electrode stand\* with a telescopic shaft when working with large beakers.

### 360°

The 360° rotating free arm also has a full range of vertical movement.

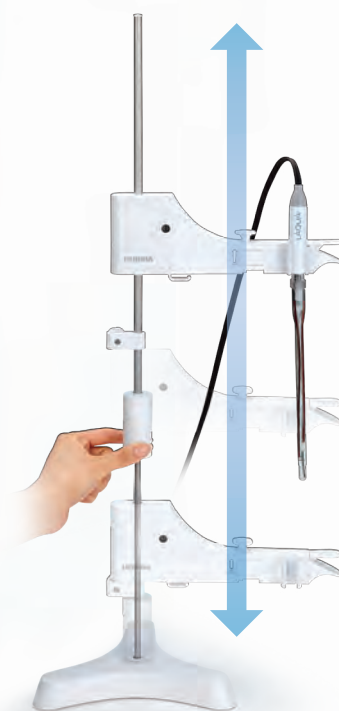


The full range of standard movements lets you arrange a variety of large and small containers wherever you please.



### 450~650mm

The long electrode stand\* has a maximum length of 650mm. It can also be stored neatly thanks to the telescopic shaft.



With the long electrode stand\*, you can prepare small quantities of standard solution for calibration or large capacity containers of buffer solution without having to detach and reattach the electrodes.

\*Optional

HORIBA electrode technology gives you the fusion of high accuracy and ease of use

# ELECTRODE

HORIBA electrode is now even tougher and responds faster.

**ToughH**

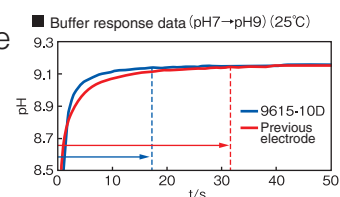
## Enhanced stability and minimized drift

Integrating two new technologies for faster response times and optimal performance.

### 01 pH fast response glass membrane (U.S. Patent No. 8262877)

New technology

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



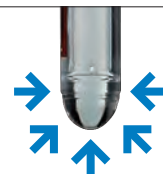
### 02 Reference electrode with increased stability (Patent pending)

New technology

Covering the internal electrode with a cation-conductive hollow fiber membrane, 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.

## ToughH electrodes are now even stronger

HORIBA's glass membrane molding technology achieves strengths more than 10 times the Japanese Industrial Standards (strength tests).



New dome-shaped construction boosts strength in all directions!

Not just “unbreakable.” New flat sensor innovations allow the measurement of trace sample droplets or the measurement of solid sample surface.

**ISFET**

## What is an ISFET(semiconductor sensor)?

ISFET is the abbreviation of Ion Sensitive Field Effect Transistor. The response membrane is equipped with semiconductor based sensor.

ISFET features

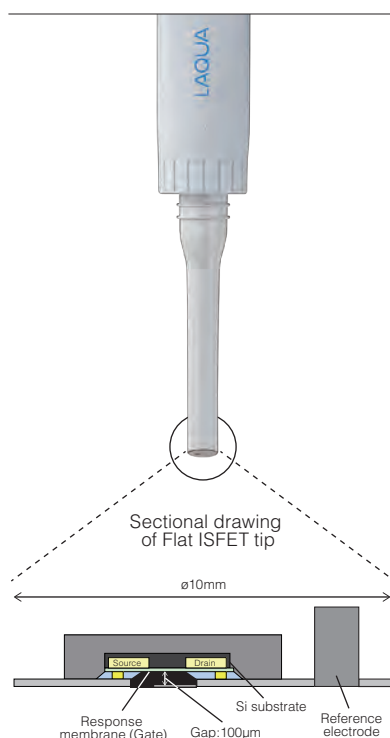
1. Will not crack or break like conventional glass electrodes
2. The sensor is flat and very small in size, enabling the measurement of extremely small samples
3. Easy handling and maintenance – simply clean with a toothbrush
4. Can be stored dry

## The flat electrode has less than 100μm distance between the housing and the sensor.

The unique structure enables to measure miniscule amount of moisture on the surface of solid objects and prevents bubbles from trapping on the sensor when measuring samples in a beaker.

## Effects of static electricity is reduced

The combination of HORIBA's unique semiconductor device construction and improved static protection circuit means that the effects of static electricity, once the Achilles heel of semiconductor sensors, are greatly reduced.



# Precision—pH electrodes from HORIBA which answers your needs.

Stable measurement for a wide range of samples. Standard **Tough<sup>タフ</sup>H** electrode (9615-10D)

**STANDARD** **Tough<sup>タフ</sup>H**  



High stability and drift reduction. No more worries about the timing of your measurement value readings.

- Uses responsive glass that is 10 times stronger than JIS standard. The domed shape provides strength in all directions, greatly reducing damage concerns.
- Constructed with smooth surfaces for easy wiping and cleaning.

Recommended

Perfect for preparing buffers. Can be used on a wide range of aqueous test solutions.

For extremely small samples Micro **Tough<sup>タフ</sup>H** electrode (9618-10D)

**MICRO** **Tough<sup>タフ</sup>H** 

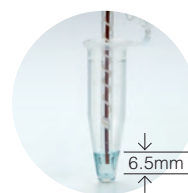


This pH electrode with temperature compensation sensor can take measurements from samples as small as 50 $\mu$ L, the smallest in the world.

- Our original manufacturing technology (Japanese Patent No. 4054245) is used to produce 2-ply piping 3mm in diameter.
- Compatible with extremely small containers such as micro tubes etc.
- The temperature sensor is located at the tip for high-speed temperature response. Refrigerated samples can be measured without needing to wait for them to return to room temperature.

Recommended

Can be used for a wide range of aqueous solutions, including those that cannot be obtained in large quantities. We recommend using our specialized cleaning solution after measuring samples that contain proteins.



For using a large container Long **Tough<sup>タフ</sup>H** electrode (9680-10D)

**LONG** **Tough<sup>タフ</sup>H**  



283 mm length & 8 mm diameter. The long, thin design makes this electrode perfect for measuring in large containers and test tubes.

- Uses responsive glass that is 10 times stronger than JIS standard. The domed shape provides strength in all directions, greatly reducing damage concerns.

Recommended

For measuring samples such as microbe culture fluids in test tubes. We recommend that it be used with the long type electrode stand (FA-70L).





For highly viscous samples Sleeve **ToughH** electrode (9681-10D)

**SLEEVE** **ToughH**  



Stable measurement can also be achieved for high viscous samples.

- The liquid junction section is constructed with a moveable sleeve that can be rinsed clean, preventing highly viscous samples from clogging the liquid junction, and maintaining stable measurement performance

#### Recommended

For highly viscous samples and solutions, and samples that contain non-aqueous solvents (such as cosmetics or paints). We recommend that you take measurements while using the graph display function to confirm stable responses. (We recommend washing with a neutral detergent after use with samples that contain oil.)

For the surface of solid samples Flat ISFET pH electrode (0040-10D)

**FLAT** **ISFET** 



The sensor is located on the flat surface of the electrode tip, with less than a 100  $\mu\text{m}$  protrusion from the housing.

- Measurements can be made from a minute amount of moisture on the solid sample surface.
- Use of a semiconductor sensor means there are no concerns that the electrode will be damaged.
- Also perfect for measuring samples in shallow containers such as Petri dishes.
- Replaceable sensor

#### Recommended

For surface measurement of gelatinous materials such as nutrient agar, and food samples such as meat. Evaluation of sheet materials such as cloth or paper. (If the sample only has a small amount of moisture, pure water etc. is required. We recommend washing with a neutral detergent after use with samples that contain oil.)

For easy and safe measurement inside solid samples (0030-10D)

**NEEDLE** **ISFET** 



The sharp tip can pierce solid material to take measurement within the sample.

- Use of a semiconductor sensor means there are no concerns that the electrode will be damaged.
- Replaceable sensor

#### Recommended

For measuring inside foodstuffs, such as fruits, vegetables and bread. (We recommend washing with a neutral detergent after use with samples that contain oil.)

For stable measurement of tap water Low conductivity/Low buffer capacity pH electrode (9630-10D)

**For TAP WATER**  



Using the high-purity glass membrane, faster stable measurement is possible at a low electrical conductivity and low buffer capacity sample

- It enables the measurement within 90 seconds measurement (Auto hold) for tap water by using the conditioning liquid(model name 230). (95% Response is within 60 seconds)

#### Recommended

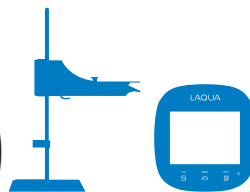
It is ideal for water quality testing in the water purification plant.

A meter to match your every need.

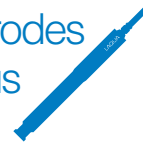
meter + electrode set

What do you measure?  
First, select a meter.

(Meter accessories: User's Manual, Quick Guide, power adaptor, electrode stand)



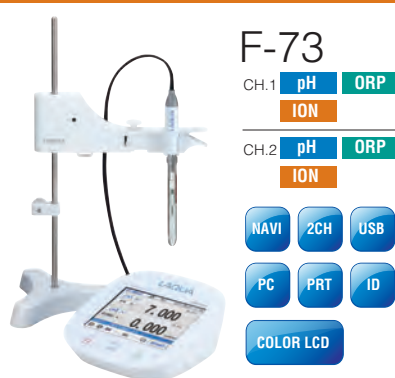
Line-up of electrodes based on various applications.



## pH Meters



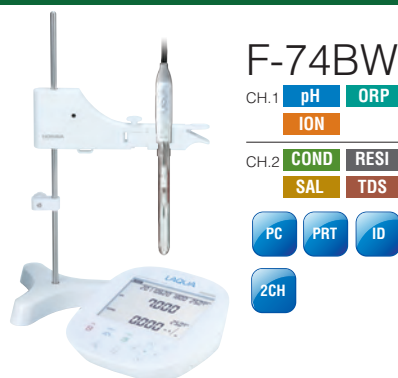
## pH-Ion Meters



## Conductivity Meters



## Multi-Parameter Meters



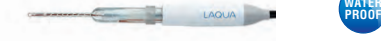
Accessories included : Electrode stand/Instruction manual/Quick manual/AC adaptor

## pH Electrodes

- Standard ToupH electrode 9615-10D



- Micro ToupH electrode 9618-10D



- Long ToupH electrode 9680-10D



- Sleeve ToupH electrode 9681-10D



- HF acid resistant pH electrode 9631-10D



- Alkali resistant pH electrode 9632-10D



- Tap water pH electrode 9630-10D



## ISFET

- Flat ISFET pH electrode 0040-10D



- Needle ISFET pH electrode 0030-10D



## ORP electrode

- Metallic electrode platinum 3-in-1 type 9300-10D



## Electrical conductivity cell

- Immersion type 3552-10D



- Immersion type 9382-10D



## ION Selective (Combination type)

- Chloride Ion 6560-10C



- Fluoride Ion 6561-10C



- Ammonia 5002A-10C



- Nitrate Ion 6581-10C



- Potassium Ion 6582-10C



- Calcium Ion 6583-10C



NAVI Navigation Function 2CH 2-channel measurement USB USB flash drive compatible PC PC connection\* compatible (USB) PRT Printer output compatible (printer sold separately) ID Security function COLOR LCD Color LCD touch panel display USP/EP/JP Conductivity measurements stipulated under various countries

## Recommended Packages

( Complete sets with meter, electrode, and standard solutions )



### Custom LCD



#### F-71A-S

Benchtop pH / ORP Custom LCD Meter Set, complete with

- electrode stand
- glass pH electrode (9615-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)



#### DS-71A-S

Benchtop Conductivity / Resistivity / Salinity / TDS Custom LCD meter, complete with

- electrode stand
- conductivity electrode (3552-10D)
- conductivity standard solutions 84 uS, 1413 uS, 12.88 mS & 111.9 mS (503-S)



#### F-74BW-A-S

Benchtop pH / ORP / ION / Conductivity / Resistivity / Salinity / TDS Custom LCD meter complete with

- electrode stand
- glass pH electrode (9615-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)
- conductivity electrode (3552-10D)
- conductivity standard solutions 84 uS, 1413 uS, 12.88 mS & 111.9 mS (503-S)

### Touch Screen Color LCD



#### F-72A-S

Benchtop pH / ORP / ION Color Touch Screen Meter Set, complete with

- electrode stand
- glass pH electrode (9615-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)



#### F-73A-S

Benchtop pH / ORP / ION, Dual Channel Color Touch Screen Meter set, complete with

- electrode stand
- glass pH electrode (9615-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)



#### DS-72A-S

Benchtop Conductivity / Resistivity / Salinity / TDS Color Touch Screen meter, complete with

- electrode stand
- conductivity electrode (3552-10D)
- conductivity standard solutions 84 uS, 1413 uS, 12.88 mS & 111.9 mS (503-S)



#### F-74A-S

Benchtop pH / ORP / ION / Conductivity / Resistivity / Salinity / TDS Color Touch Screen meter complete with

- electrode stand
- glass pH electrode (9615-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)
- conductivity electrode (3552-10D)
- conductivity standard solutions 84 uS, 1413 uS, 12.88 mS & 111.9 mS (503-S)



pH Electrode Selection Guide

		3-in-1 ELECTRODES (ToupH)					ISFET ELECTRODES		3-in-1 ELECTRODES	
		PLASTIC	STANDARD ToupH	LONG ToupH	MICRO ToupH	SLEEVE ToupH	NEEDLE ISFET	FLAT ISFET	SLEEVE	NON-AQUEOUS
		9625-10D	9615-10D	9680-10D	9618-10D	9681-10D	0030-10D	0040-10D	6367-10D	6377-10D
Specification	Applicable temperature range (°C)	0-100	0-100	0-100	0-60	0-60	0-60	0-60	0-60	0-60
	Diameter (mm)	16	12	8	3	12	15	10	12	12
	Position of liquid junction (approx. mm)	15	13	21	6	26	11	0.1	10	23
	Length (mm)	150	198	283	185	203	190	190	150	150

pH - Sample Conditions										
Aqueous Solution	Conductivity	Normal (over 100 mS/m)	●	●	●	●	●	●	●	●
		Low (approx.10 ~100 mS/m)				○				●
		Very low (approx. 5 ~100 mS/m)				○				●
		High (approx. 5 S/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			○	○	○	○	○	○	●
Solid/Semisolid	Suspension			○	○	●	○	○		●
	Inside						●			
	Surface							●		

pH - Sample Conditions										
Sample Containers	Microtube/plate (> 50 µL)		×	×	×	●	×	×	×	×
	NMR tube ϕ5 mm ID > ϕ4 mm		×	×	×	×	×	×	×	×
	Ampule > ϕ4 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		×	×	×	×	×	●	×	×

pH - Typical Samples										
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									
	Organic solvent		×				×	×		○
	KCl-reactive solution		×	×	×	×	×	×	×	×
	Surfactant			○			●			○
	Water-based paint			○			●			○
	Dye/coloring agent						●			○
Pharmaceutical/ biology sample	Protein-containing sample			○		○	●		○	
	Medicinal preparation					○	○			○
	Enzyme solution				○	●				
	Tris buffer			●		○	○			
	Suspension			○			●			●
	Agar medium							●		
Food	Jam			○			●	● (inside) ● (surface)		○
	Meat/fish						● (inside) ● (surface)			
	Fruit/vegetable						● (inside) ● (surface)			
	Dough						● (inside) ● (surface)			
	Honey						○ (inside) ○ (surface)			●
	Cheese/butter						● (inside) ○ (surface)			
	Yogurt		○	○		○	● (inside) ● (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			○		○				●

● Recommended ○ Can be measured × Prohibited or risk of damage

# Electrodes/Accessories

For LAQUA/LAQUA<sup>act</sup>



## pH Electrode

	Description	Model	Temp. range (°C)	pH range	Part No.
Combination (3-in-1) pH electrode	Plastic body	9625-10D	0~100 <sup>*1</sup>	0~14	3200360505
	Standard ToupH	9615-10D	0~100	0~14	3200366539
	Sleeve ToupH	9681-10D	0~60	0~14	3200366572
	Long ToupH	9680-10D	0~100 <sup>*1</sup>	0~14	3200366560
	Micro ToupH	9618-10D	0~60	0~14	3200366552
	Sleeve	6367-10D	0~60	0~14	3014079136
	For measurement of low-conductivity water and non-aqueous solvents	6377-10D	0~60	0~14	3014093085
	Needle type	6252-10D	0~60	0~12	3014080850
	For Tap water	9630-10D	0~100	0~14	3200528726
	For Hydrofluoric acid sample	9631-10D	0~60	2~12	3200524119
	For Strong alkali sample	9632-10D	0~100	0~14	3200524120
ISFET pH electrode	Needle type ISFET	0030-10D	0~60	0~14	3014028323
	Flat type ISFET	0040-10D	0~60	0~14	3200367925
	Needle type ISFET(0030-10D) sensor	0131	0~60	0~14	3014028400
	Flat type ISFET(0040-10D) sensor	0141	0~60	0~14	3200367926
Combination pH electrode	For very slender test tubes	6069-10C	0~60	0~14	3014081107
	Flat type	6261-10C	0~50	0~12	3014081807
Glass pH electrode	Standard type	1066A-10C	0~100	0~14	3014080432
	For measurement of low-conductivity water and non-aqueous solvents.	1076A-10C	0~100	0~14	3014093084
Reference electrode	Standard type	2060A-10T	0~100	—	3014080434
	Double-junction type	2565A-10T	0~100	—	3014080436
Temperature electrode	For temperature compensation and measurement	4163-10T	0~100	—	3014080375
ORP electrode	Platinum 3-in-1 type	9300-10D	0~ 60	—	3014046710

## Conductivity Cell

- Conductive material: Platinum rings coated with platinum black
- Body housing: Glass except 9382-10D - Plastic




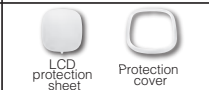

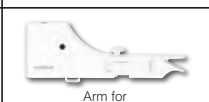
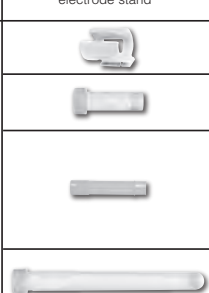
Cell constant cm <sup>-1</sup> (m <sup>-1</sup> )		Model	Range cm <sup>-1</sup> (m <sup>-1</sup> )	Minimum Volume (mL)	Application	Temp. range (°C)	Part No.
Immersion type	0.1 (10)	3551-10D	0.1 μS~10 mS (10 μS~1 S)	50	For low conductivity water (deionized water or other)	0~60	3014081712
	1 (100)	9382-10D	1 μS~100 mS (0.1 mS~10 S)	20~30	Waterproof. For general purposes	0~80	3014046709
	1 (100)	3552-10D	1 μS~100 mS (0.1 mS~10 S)	15	For general purposes	0~100	3014081545
	10 (1000)	3553-10D	10 μS~1 S (1 mS~100 S)	50	For high conductivity water	0~60	3014081714
Flow type	0.1 (10)	3561-10D	0.1 μS~10 mS (10 μS~1 S)	10	For low conductivity water (pure water or other)	0~60	3014082350
	1 (100)	3562-10D	1 μS~100 mS (0.1 mS~10 S)	16	For general purposes	0~60	3014082513
	10 (1000)	3573-10C	10 μS~1 S (1 mS~100 S)	4	For high conductivity water	0~60	3014082590
	10 (1000)	3574-10C	10 μS~100 mS (1 mS~10 S)	0.25	For column chromatography using a very small amount of sample	0~60	3014082592

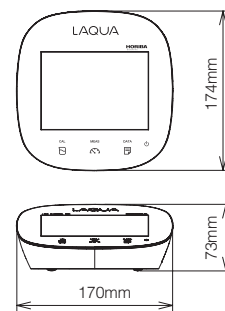
## Ion Selective Electrode

- All ion electrodes (except combination electrodes) require a sensor holder for attaching to the electrode stand.
- Please be aware of the hindering ion and pH range interference of ion electrodes. • D-73 connects combination type ion electrodes only.

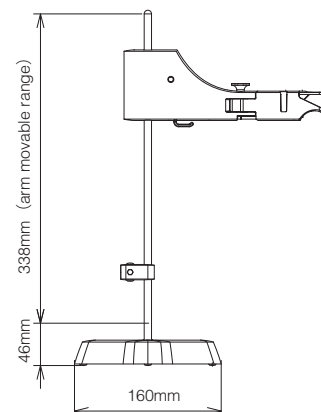
Electrode name	Model	Measuring range	Interfering ion influence <sup>*1</sup>	Part No.	Model	Part No.
Combination Chloride ion electrode*	6560-10C	0.4~35,000 mg/L Cl <sup>-</sup>	Br=0.03 NO <sub>3</sub> <sup>-</sup> , F <sup>-</sup> , HCO <sub>3</sub> <sup>-</sup> , SO <sub>4</sub> <sup>2-</sup> , PO <sub>4</sub> <sup>2-</sup> =1,000	3014093430	7660	3014093436
Combination Fluoride ion electrode*	6561-10C	0.02~19,000 mg/L F <sup>-</sup>	(ex. Al <sup>3+</sup> , Fe <sup>3+</sup> )coexisted and foamed the complex.	3014093431	7661	3014093438
Combination Nitrate ion electrode*	6581-10C	0.62~62,000 mg/L NO <sub>3</sub> <sup>-</sup>	CH <sub>3</sub> COO <sup>-</sup> =300 SO <sub>4</sub> <sup>2-</sup> =Over 1000	3014093432	7681	3014068364
Combination Potassium ion electrode*	6582-10C	0.04~39,000 mg/L K <sup>+</sup>	Li <sup>+</sup> , Na <sup>+</sup> , Mg <sup>2+</sup> , Ca <sup>2+</sup> , Sr <sup>2+</sup> , Ba <sup>2+</sup> =Over 1000	3014093433	7682	3014069795
Combination Calcium ion electrode*	6583-10C	0.4~40,080 mg/L Ca <sup>2+</sup>	Mn <sup>2+</sup> =500 Mg <sup>2+</sup> =1,000 Na <sup>+</sup> , K <sup>+</sup> , Ba <sup>2+</sup> , NH <sub>4</sub> <sup>+</sup> =Over 1,000	3014093434	7683	3014068795
Combination Ammonia electrode*	5002A-10C	0.1~1,000 mg/L NH <sub>3</sub>	—	3014093560	membrane (NH <sub>3</sub> )	3014067083

<sup>\*1</sup> The selection coefficient is a ratio of the limit concentration of coexisting ions (mol/L) to the ion concentration to be measured (mol/L); A value of 1000 means that the coexisting ions can be permitted up to 1000 times the ion measured and "N/A" means that chemical change occurs in the solid response membrane.

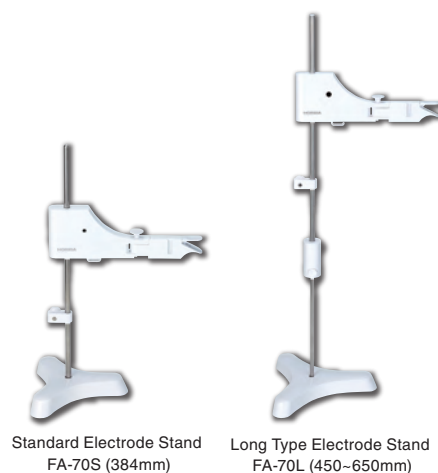
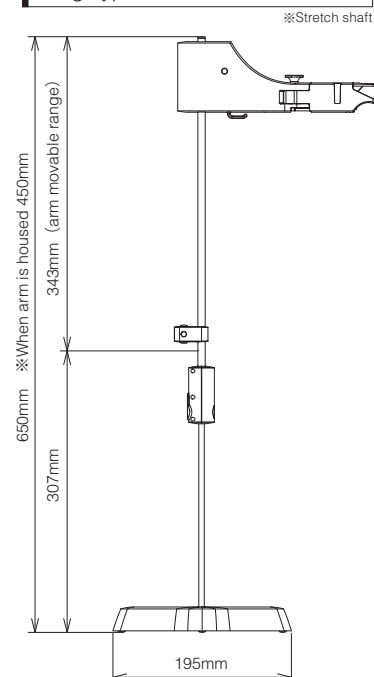
pH Solution Kits				
Name	Type	Specification	Volume	Part No.
NIST pH Buffer Solution Kit	501-S	(4.01/6.86/9.18/KCl Reference)	250mL ea	3999960015
USA pH Buffer Solution Kit	502-S	(4.01/7.00/10.01/KCl Reference)	250mL ea	3999960016
pH Solutions				
Buffer Solution at 25°C	500-2	pH 1.68	500ml	3999960028
	500-4	pH 4.01	500ml	3999960029
	500-686	pH 6.86	500ml	3999960030
	500-7	pH 7.00	500ml	3999960031
	500-9	pH 9.18	500ml	3999960032
	500-10	pH 10.01	500ml	3999960033
	500-12	pH 12.46	500ml	3999960034
Conductivity Solution Kit				
Name	Type	Specification	Volume	Part No.
Conductivity Standard Solution Kit	503-S	(84 uS/1413 uS/12.88 mS/111.8 mS)	250ml ea	3999960017
Conductivity Solutions				
Conductivity Standard Solution at 25°C	500-21	84 uS	500ml	3999960035
	500-22	1413 uS	500ml	3999960036
	500-23	12.88 mS	500ml	3999960037
	500-24	111.8 mS	500ml	3999960038
ORP				
Name	Type	Specification	Part No.	
Powder for ORP Standard Solution	160-51	89 mV For 250 mL (10 packets per set)	3200043618	
	160-22	258 mV For 250 mL (10 packets per set)	3200043617	
Internal Filling Solution for Electrodes				
Name	Type	Specification	Volume	Part No.
Internal Filling Solution for pH Combination Electrode	525-3	3.33 M KCl	250ml	3999960023
Internal Filling Solution for Reference Electrode	300	3.33 M KCl	250ml	3200043640
Accessories				
		Name	Part No.	
Printer		Printer (for GLP/GMP compliance) Cable sold separately, Plain paper	3014030147 (230v) 3014030146 (120v)	
		Printer cable (1.5 m)	3014030148	
		Printer paper (20 rolls)	3014030149	
		Ink ribbon (5 pcs/set)	3014030150	
Power		AC adapter	AC adapter cable set for LAQUA meters. (AC adaptor 1.8 m, cable 1 m) 3014031952 (230v) 3014031951 (120v)	
For Inspection		Digital simulator X-51 (pH, mV, ION, DO simulator)	3014028368	
		Digital simulator X-52 (Conductivity simulator)	3014028370	
Meter Accessories		LCD protection sheet (2 pcs/pack)	3200382462	
		Protection cover (Protects the meter for F-70, DS-70 series)	3200382441	
Communication and Output		USB cable (Cable to connect meter and PC.)	3200373941	
		Analog cable (Analog (alarm) output cable)	3014030152	
		Serial cable (Cable to connect meter and PC (Serial, 9 pins))	3014030151	
Electrode Stand (images on the right)		FA-70S Electrode stand (adjustable type) (Free-standing type. Height 384 mm)	3200382557	
		FA-70L Electrode stand (long type) (Free-standing type. Height 450~650mm)	3200382560	
		Arm for electrode stand (For FA-70S, FA-70L)	3200373991	
Electrode Accessories		Sensor Holder (Used for Mounting Electrode Stand, 2 pcs.)	3200373961	
		Electrode Protection Cap (Standard) (For 9615-10, 9618-10D, 9681-10D pH Electrode, 3 pcs.)	3200382477	
		Electrode Protection Cap (Standard) (For 9621-10D, 9625-10D, 9630-10D, 9631-10D, 9632-10D, 6367-10D, 6377-10D, 6252-10D, 6261-10C, 1066A-10C, 1076-10C, 2060-10T, 9300-10D, 9382-10D, 3552-10D pH Electrode, 5 pcs.)	3200043508	
		Electrode Protection Cap for Long Electrode (For 9678/9680 pH Electrode, 1 pc.)	3200382482	



Body • Standard Electrode Stand



Long Type Electrode Stand





		F-71	F-72	F-73	F-74	F-74BW	DS-71	DS-72
pH	Measurement method	Glass electrode method				—	—	—
	Measurement range	pH 0.000~14.000				—	—	—
	Display range	pH -2.000~19.999	pH -2.000~20.000			pH -2.000~19.999	—	—
	Resolution	0.001 pH	0.01/0.001 pH			0.001 pH	—	—
	Auto range select	—	●	●	●	—	—	—
	Repeatability	±0.005 pH±1 digit	±0.001 pH±1 digit			±0.005 pH±1 digit	—	—
	pH calibration point	5	5			5	—	—
	Repeatability check	●	●	●	●	●	—	—
	Alarm limit of calibration	●	●	●	●	●	—	—
	Periodical check	—	●	●	●	—	—	—
mV (ORP)	Measurement range	±1999.9 mV				—	—	—
	Resolution	0.1 mV				—	—	—
	Repeatability	±0.1 mV±1 digit				—	—	—
Temperature	Measurement range	0.0~100.0°C (-30.0~130.0°C)				—	—	—
	Resolution	0.1°C				—	—	—
	Repeatability	±0.1°C±1 digit				—	—	—
ION	Measurement method	—	Ion electrode method			—	—	—
	Measurement range	—	0.00 µg/L~999 g/L (mol/L)			—	—	—
	Resolution	—	3 significant digits			—	—	—
	Repeatability	—	±0.5%F.S.±1 digit			—	—	—
	Periodical check	—	●	●	●	—	—	—
	Calibration curve point	—	5	5	5	5	—	—
	Addition method measurement	—	●	●	●	—	—	—
Conductivity	Measurement method	—	—	—	2 AC bipolar method			—
	Measurement range (Display range)	—	—	—	0.0 µS/cm~19.99 µS/cm : Cell constant 0.1/cm 0.000 mS/cm~199.9 mS/cm : Cell constant 1.0/cm 0.00 mS/cm~1999.0 mS/cm : Cell constant 10.0/cm			—
	Resolution	—	—	—	0.05% of full scale			—
	Repeatability	—	—	—	±0.5%F.S.±1 digit			—
	Measurement unit selection	—	—	—	●	●	●	●
	Distilled water temperature conversion	—	—	—	●	●	●	●
	Periodical check	—	—	—	●	—	—	●
Salinity	JP/EP/USP/CP Pharmaceutical water application	—	—	—	●	—	—	●
	Measurement method	—	—	—	Conversion from conductivity value			—
	Measurement range (Display range)	—	—	—	0.00~80.00 ppt (0.000%~8.000%)			—
	Resolution	—	—	—	0.01 ppt (0.001%)			—
Resistivity	Salt concentration calibration	—	—	—	●	●	●	●
	Measurement method	—	—	—	Conversion from conductivity value			—
	Measurement range (Display range)	—	—	—	0.0 Ω·cm~199.9 MΩ·cm : Cell constant - 0.1/cm 0.00 Ω·cm~19.99 MΩ·cm : Cell constant - 1.0/cm			—
	Resolution	—	—	—	0.05% F.S.			—
TDS	Repeatability	—	—	—	±0.5%F.S.±1 digit			—
	Measurement method	—	—	—	Conversion from conductivity value (EN27888 or TDS Factor)			—
	Measurement range (Display range)	—	—	—	0.01 mg/L~1000 g/L	0.01 mg/L~100 g/L	0.01 mg/L~1000 g/L	—
	Resolution	—	—	—	0.01 mg/L			—
Input/output	Input (number of channels)	1	1	2	2	2	1	1
	USB peripherals (Communication with PC)*1	●	●	●	●	●	●	●
	USB host (USB memory)	—	●	●	●	—	—	●
	RS-232C (Printer/PC)	●	●	●	●	●	●	●
Data	Analog output	—	●	●	●	—	—	●
	Memory number	999	2000	2000	2000	999	999	2000
	Interval memory	●	●	●	●	●	●	●
	ID input	●	●	●	●	●	●	●
Display	Data search	—	●	●	●	—	—	●
	Display	Custom LCD	Color graphic LCD with capacitive Touch Panel			Custom LCD		Color graphic LCD with capacitive Touch Panel
	Dual component display	—	—	●	●	●	—	—
	Multilanguage display	—	Japanese/English/Chinese/Korean			—	—	Japanese/English/Chinese/Korean
Function	Navigation function	—	●	●	●	—	—	●
	User guide	—	●	●	●	—	—	●
	Graph display	—	●	●	●	—	—	●
	Printer connectivity (GLP/GMP)	●	●	●	●	●	●	●
	Custom printing function	—	●	●	●	—	—	●
	Temperature compensation (Auto/manual)	●	●	●	●	●	●	●
	AutoHold function	●	●	●	●	●	●	●
	AutoHold setting	—	●	●	●	—	—	●
	Stability function (pH/ION)	—	●	●	●	—	—	●
	Operator ID	—	●	●	●	—	—	●
	Security (password)	●	●	●	●	●	●	●
	Version up function	●	●	●	●	●	●	●
Ambient temperature		0~45°C						
Power		AC adaptor 100 ~ 240 V 50/60 Hz						
Dimensions		170 (W)×174 (D)×73 (H)mm (Excluding electrode stand and AC adaptor)						
Power consumption		Approx. 0.7 VA	Approx. 9.8 VA			Approx. 0.7 VA	Approx. 9.8 VA	
Mass of main unit		Approx. 500 g	Approx. 700 g			Approx. 500 g	Approx. 700 g	

\*1 USB cable sold separately. Software can be download by web registration.

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