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

ABQINDUSTRIAL
PRECISION. RELIABILITY. QUALITY.

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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

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.

Smart navigation

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 — Calibration

MEAS — Measurement

DATA — 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

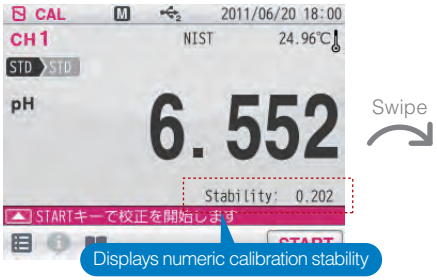
pH value and a second measurement (such as ORP, ion, electrical conductivity) can be displayed simultaneously.

Accurate calibration for measurement precision.

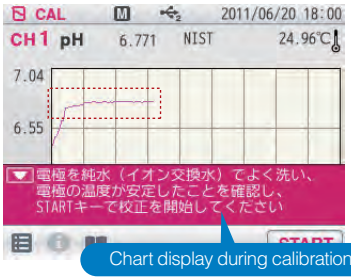
Correct calibration is done under "stable" conditions. Calibration performed under unstable conditions is one of the big causes of measurement error. Calibration response is visualized as numerical data or a graph. With LAQUA, you are sure about your calibration validity

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!



Swipe



Displays numeric calibration stability

Chart display during calibration

NAVIGATION

Experience LAQUA on the WEB

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

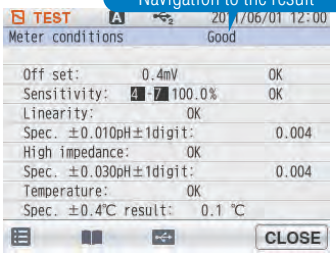
On-screen support for resolving a problem that occurs during calibration or sample measurements. A user's guide is incorporated in the software to assist with any operational difficulties.

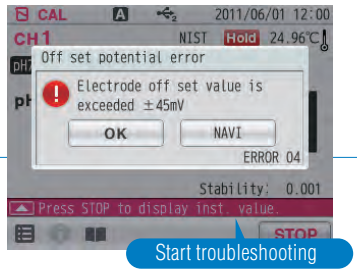
Application Functions

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

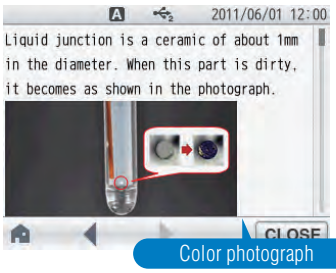
Start inspection

Navigation to the result

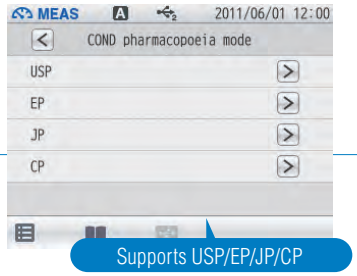




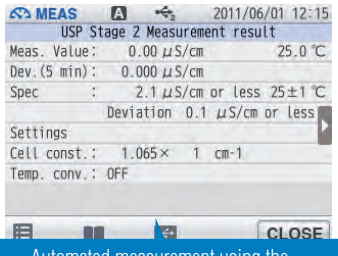
Start troubleshooting



Color photograph



Supports USP/EP/JP/CP



Automated measurement using the standard method. Just wait for the result.

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/Pharmacopeias/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)

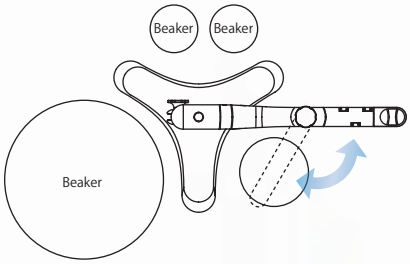
LAQUA's free arm electrode stand can handle any container size or position.

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

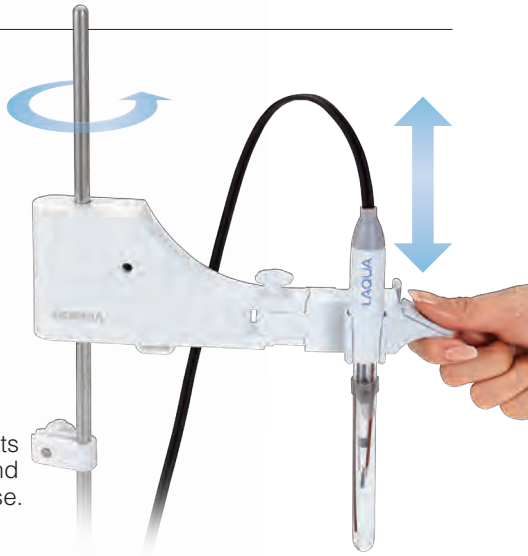
You can also use the long electrode stand* with a telescopic shaft when working with large beakers.

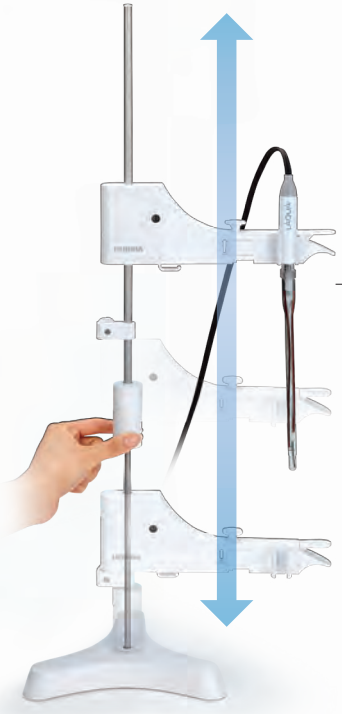
360°

The 360°rotaing 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. ToupH

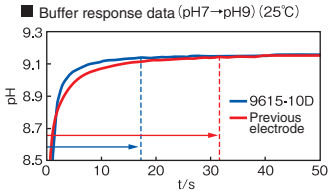
Enhanced stability and minimized drift

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.



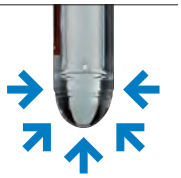
02 Reference electrode with increased stability (Patent pending)

New technology

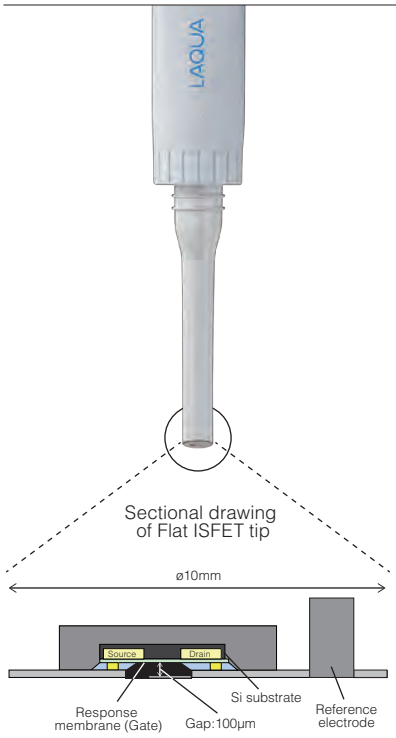
Covering the internal electrode with a cation-conductive hollow fiber membrane, liquid junction clogging by silver ions and silver complex ions is reduced to 1/1000 of the conventional technology. Furthermore, maintained internal solution concentration ensures a stable standard electrical potential.

ToupH 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.

New • pH electrode

Precision—pH electrodes from HORIBA which answers your needs.

Stable measurement for a wide range of samples. Standard ToupH electrode (9615-10D)

STANDARD ToupH

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

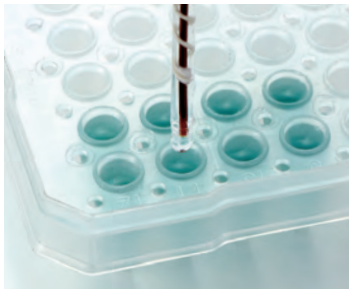
- Uses responsive glass that is 10 times stronger than JIS standard. The domed shape provides strength in all directions, greatly reducing damage concerns.
- Constructed with smooth surfaces for easy wiping and cleaning.

Recommended

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

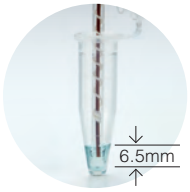
For extremely small samples Micro ToupH electrode (9618-10D)

MICRO ToupH



This pH electrode with temperature compensation sensor can take measurements from samples as small as 50µL, 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 ToupH electrode (9680-10D)

LONG ToupH

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 ToupH electrode (9681-10D)

SLEEVE ToupH

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 µm protrusion from the housing.

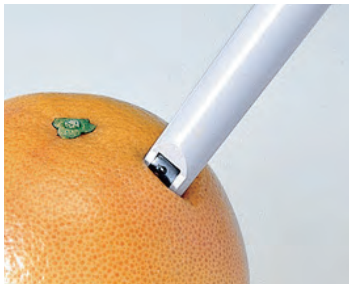
- Measurements can be made from a minute amount of moisture on the solid sample surface.
- Use of a semiconductor sensor means there are no concerns that the electrode will be damaged.
- Also perfect for measuring samples in shallow containers such as Petri dishes.
- Repalceable sensor

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.
- Repalceable 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.

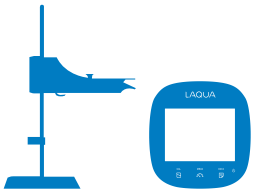
• Please view the pH electrode selection guide (P11)

A meter to match your every need.

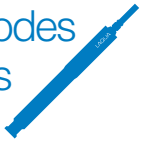
meter + electrode set

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

F-71

CH.1 pH ORP

PC PRT ID

pH-Ion Meters

F-72

CH.1 pH ORP ION

PC PRT ID

NAVI USB

COLOR LCD

F-73

CH.1 pH ORP ION

CH.2 pH ORP ION

NAVI 2CH USB

PC PRT ID

COLOR LCD

Conductivity Meters

DS-71

COND RESI

SAL TDS

PC PRT ID

DS-72

COND RESI

SAL TDS

NAVI USB PC

ID PRT

USP/EP/JP

COLOR LCD

Multi-Parameter Meters

F-74BW

CH.1 pH ORP ION

CH.2 COND RESI SAL TDS

PC PRT ID

2CH

F-74

CH.1 pH ORP ION

CH.2 COND RESI SAL TDS

NAVI 2CH USB PC

PRT ID USP/EP/JP

COLOR LCD

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

pH Electrodes

- Standard ToupH electrode 9615-10D

Pb Free WATER PROOF

- Micro ToupH electrode 9618-10D

WATER PROOF

- Long ToupH electrode 9680-10D

Pb Free WATER PROOF

- Sleeve ToupH electrode 9681-10D

Pb Free WATER PROOF

- HF acid resistant pH electrode 9631-10D

Pb Free WATER PROOF

- Alkali resistant pH electrode 9632-10D

Pb Free WATER PROOF

- Tap water pH electrode 9630-10D

Pb Free WATER PROOF

ISFET

- Flat ISFET pH electrode 0040-10D

WATER PROOF

- Needle ISFET pH electrode 0030-10D

WATER PROOF

ORP electrode

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

WATER PROOF

Electrical conductivity cell

- Immersion type 3552-10D

- Immersion type 9382-10D

WATER PROOF

ION Selective (Combination type)

- Chloride Ion 6560-10C Cl^-

- Fluoride Ion 6561-10C F^-

- Ammonia 5002A-10C NH_4^+

- Nitrate Ion 6581-10C NO_3^-

- Potassium Ion 6582-10C K^+

- Calcium Ion 6583-10C Ca^{2+}

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 referece 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 & 333M KCl referece 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 referece 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 referece 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 referece 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			○	○	○	○	○	○	○	◉
	Suspension			○	○	○	◉	○	○		◉
Solid/Semisolid	Inside							◉			
	Surface								◉		
pH - Sample Conditions											
Sample Containers	Microtube/plate (> 50 µL)		×	×	×	◉	×	×	×	×	×
	NMR tube	ø5 mm ID > ø4 mm	×	×	×	×	×	×	×	×	×
	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		×	×	×	×	×	×	◉	×	×
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*act*

pH Electrode

	Description	Model	Temp. range (°C)	pH range	Part No.
Combination (3-in-1) pH electrode	Plastic body	9625-10D	0~100*1	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*1	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 $cm^{-1}(m^{-1})$		Model	Range $cm^{-1}(m^{-1})$	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*1	Part No.
Combination Chloride ion electrode*	6560-10C	0.4~35,000 mg/L Cl^-	Br^-=0.03 NO_3, F^-, HCO_3^-, SO_4^{2-}, PO_4^{2-}=1,000	3014093430
Combination Fluoride ion electrode*	6561-10C	0.02~19,000 mg/L F^-	(ex. Al^{3+}, Fe^{3+})coexisted and foamed the complex.	3014093431
Combination Nitrate ion electrode*	6581-10C	0.62~62,000 mg/L NO_3^-	CH_3COO^-=300 SO_4^{2-}=Over 1000	3014093432
Combination Potassium ion electrode*	6582-10C	0.04~39,000 mg/L K^+	Li^+, Na^+, Mg^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+}=Over 1000	3014093433
Combination Calcium ion electrode*	6583-10C	0.4~40,080 mg/L Ca^{2+}	Mn^{2+}=500 Mg^{2+}=1,000 Na^+, K^+, Ba^{2+}, NH_4^+=Over 1,000	3014093434
Combination Ammonia electrode*	5002A-10C	0.1~1,000 mg/L NH_3	—	3014093560

Replacement Tip

Model	Part No.
7660	3014093436
7661	3014093438
7681	3014068364
7682	3014069795
7683	3014068795
membrane (NH_3)	3014067083

*1 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

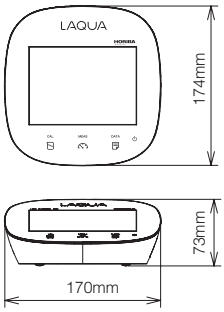
Name	Type	Specification	Part No.
Powder for ORP Standard Solution	160-51	89 mV For 250 mL (10 packets per set)	3200043618
	160-22	258 mV For 250 mL (10 packets per set)	3200043617

Internal Filling Solution for Electrodes

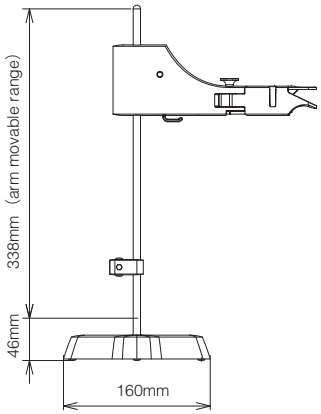
Name	Type	Specification	Volume	Part No.
Internal Filling Solution for pH Combination Electrode	525-3	3.33 M KCl	250ml	3999960023
Internal Filling Solution for Reference Electrode	300	3.33 M KCl	250ml	3200043640

Accessories

		Name	Part No.
Printer	 Printer  Printer cable  Ink ribbon  Printer paper	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	 X-51  X-52	Digital simulator X-51 (pH, mV, ION, DO simulator)	3014028368
		Digital simulator X-52 (Conductivity simulator)	3014028370
Meter Accessories	 LCD protection sheet  Protection cover	LCD protection sheet (2 pcs/pack)	3200382462
		Protection cover (Protects the meter for F-70, DS-70 series)	3200382441
Communication and Output	 USB cable  Serial cable	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)	 Arm for electrode stand	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

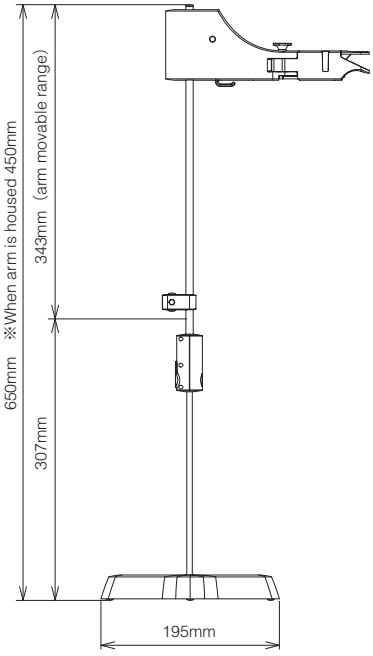


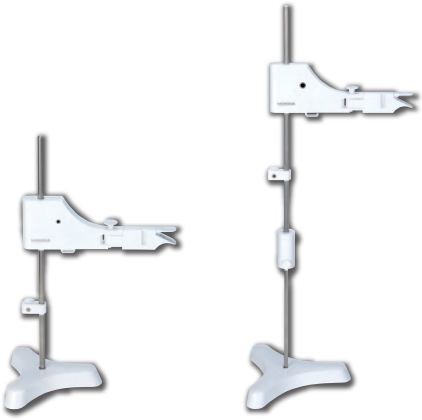
Body • Standard Electrode Stand



Long Type Electrode Stand

※Stretch shaft





Standard Electrode Stand FA-70S (384mm)

Long Type Electrode Stand FA-70L (450~650mm)

LAQUA F-70/DS-70 series specifications

		F-71	F-72	F-73	F-74	F-74BW	DS-71	DS-72
pH	Measurement method	Glass electorode 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	—	—	—	●	—	—	●
	JP/EP/USP/CP Pharmaceutical water aplication	—	—	—	●	—	—	●
Salinity	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%)			
	Salt concentration calibration	—	—	—	●	●	●	●
Resistivity	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.			
	Repeatability	—	—	—	±0.5%F.S.±1 digit			
TDS	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)	●	●	●	●	●	●	●
	Analog output	—	●	●	●	—	—	●
Data	Memory number	999	2000	2000	2000	999	999	2000
	Interval memory	●	●	●	●	●	●	●
	ID input	●	●	●	●	●	●	●
	Data search	—	●	●	●	—	—	●
Display	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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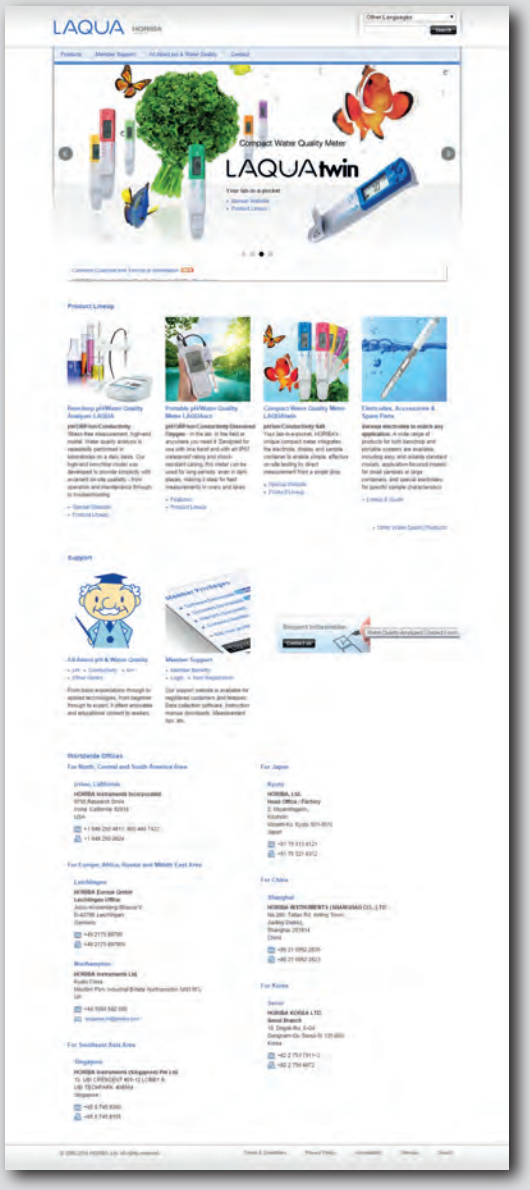

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Developed using extensive feedback from users, our new LAQUA meters deliver the best solution for water quality analysis. Our LAQUA website features an online 'Selection Guide' to enable you to find the perfect LAQUA meter and electrode for your need.

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⚠ Please read the operation manual before using this product to assure safe and proper handling of the product.