

# LAQUA

Precision, in the  
palm of your hand.



pH	ORP	ION	DO
Conductivity	Resistivity	Salinity	TDS

Handheld Water Quality Meters  
D-70 / ES-70 / OM-70 Series



In the lab, in the field or  
anywhere you need it

# LAQUA



## Shock-resistant

Polycarbonate resin\* used in automobiles and mobile phones has been adopted to enhance shock resistance.

\*Polycarbonate resin has about twice the shock resistance of conventional ABS resin.



## Visible LCD in dark places

Backlight allows reading of measured values even in the dark.

\*Except D-71



## Waterproof and dustproof

IP67 rated waterproof and dustproof casing.

\*IP67: Fully waterproof for approximately 30 minutes in 1 meter of water.



## Electrode Line Up



**Plastic Body pH Electrode**  
9625-10D

Waterproof plastic body pH electrode is suited for use in the field without anxiety. It can be used for various applications such as rivers and solutions.



**Tap water pH electrode**  
9630-10D

Quick and stable measurement is possible for low conductivity samples or those with low buffering ability, such as tap water. Suitable for water quality testing at water treatment plants.



**Hydrofluoric acid resistant pH electrode**  
9631-10D

With a long life and easy maintenance, this electrode is capable of approximately 1000 reliable measurements\*. Suitable for the management of water contaminated with hydrofluoric acid resulting from an etching process.

\*When a measurement is conducted for 1 minute with 1 % hydrofluoric acid solution (at 25 °C).

## One hand operation

Slim body fits in your hand. Only three basic operation buttons for one-hand operability.



## Extended operation

Uses about 10% of the power compared to conventional meters. With up to 1000 hrs of use\*, long periods of field work is possible.

\*D-71/D-72

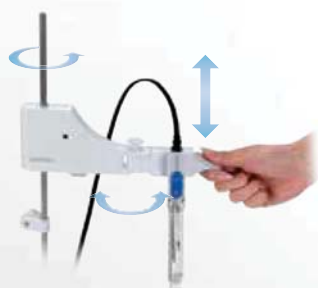
## Easy to carry

The compact and ergonomic design is easy to carry and includes a cable winding function with the optional electrode hook attachment.





The casing is made from shock resistant and extremely durable polycarbonate resin. With high chemical resistance it is ideal for harsh environments.



### Laboratory use capability

The optional electrode stand offers excellent manoeuvrability, allowing the electrode to be moved up and down, and from left to right, easily with one hand.



### Easy-to-view large display shows two measurement values simultaneously

The measurement values are easily visible on a display that is about 40% larger than those of our conventional products. Two measurement values can be displayed on a single screen.

\*For selected models, an optional cable is necessary to connect to a computer. The software can be downloaded after user registration.



### Chemical resistance

The polycarbonate resin casing is extremely chemical resistant. It can be cleaned using alcohol.

\*Resistant to alcohol, weak acid, bases and oil.



### Various data processing

The built-in data memory can store 1000 items, and connecting to a computer allows measurement data to be collected. Output to a GLP/GMP-compatible printer is also possible.

\*For selected models, an optional cable is necessary to connect to a computer. The software can be downloaded after user registration.



#### Alkali resistant pH electrode

9632-10D

A strong alkali resistance achieves approximately five times\* longer stability than that of our conventional products. Suitable for use with strong alkali samples such as plating solutions.

\*With 0.1 mol/L sodium hydroxide solution (about pH 13) (at 60°C).



#### ISFET pH Electrode

0040-10D(Flat Type)  
0030-10D(Needle Type)

A semiconductor sensor eliminates the risk of breakage which may occur in glass electrodes. Suitable for surface and inner measurements of solids.

### 【Various functions】

LAQUAact boasts a variety of safety and other useful functions to assist with measurements and data processing. For details, see page 6 for the specifications.

Common	Interval measurement function (except D-71)
	Sample ID number setting function
	Clock function and auto power-off function
	Usable with AAA alkaline batteries, Ni-MH batteries, or AC adapter
pH 【D-70 series】	Automatic calibration and calibration interval alarm function
	Usable with both 5-point calibration and USA/NIST standard solutions
Conductivity 【D-74/ES-71】	Electrical resistivity/total dissolved solids/salt content conversion functions
Dissolved Oxygen 【D-75/OM-71】	Automatic range switching, automatic temperature conversion, and unit switching functions
	Temperature compensation, atmospheric pressure calibration and salt concentration calibration functions
	Oxygen concentration and saturated oxygen concentration measurement functions

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, AAA alkaline batteries x 2)



Line-up of electrodes based on various applications.

## pH Meters



D-71

CH.1 pH

WATER PROOF ID

SHOCK PROOF



D-72

CH.1 pH ORP

BACK LIGHT WATER PROOF ID PC

PRT SHOCK PROOF

## Conductivity Meter



ES-71

CH.1 COND RESI  
SAL TDS

BACK LIGHT WATER PROOF ID PC

PRT SHOCK PROOF

## Multi-Parameter Meters



D-73 pH-Ion

CH.1 pH ORP ION

CH.2 pH ORP ION

BACK LIGHT 2CH WATER PROOF ID

PC PRT SHOCK PROOF



D-74 pH-EC

CH.1 pH ORP

CH.2 COND RESI  
SAL TDS

BACK LIGHT 2CH WATER PROOF ID

PC PRT SHOCK PROOF

## Dissolved Oxygen Meter



OM-71

CH.1 DO

BACK LIGHT WATER PROOF ID PC

PRT SHOCK PROOF



D-75 pH-DO

CH.1 pH ORP

CH.2 DO

BACK LIGHT 2CH WATER PROOF ID

PC PRT SHOCK PROOF

## pH electrode

- General purpose electrode 9625-10D



Pb Free WATER PROOF

- Tap water pH electrode 9630-10D



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

- ISFET electrode  
0040-10D (Flat type)



WATER PROOF

- 0030-10D (Needle type)



WATER PROOF

## ORP electrode

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



WATER PROOF

## Electrical conductivity cell

- Immersion type 9382-10D



WATER PROOF

## Dissolved Oxygen electrode

- Laboratory use 9520-10D



WATER PROOF

- Field use  
9551-20D (2m Cable)  
9551-100D (10m Cable)



WATER PROOF

BACK LIGHT Backlit LCD

2CH 2-channel measurement

PC PC connection compatible\*

PRT Printer output compatible (Printer sold separately)

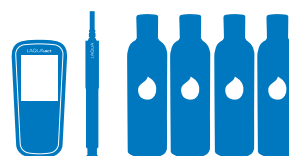
WATER PROOF Waterproof and dustproof (IP67 rated)

ID Security function

SHOCK PROOF Shock and chemical resistant body case

## Recommended Packages

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



### D-71A-S

Waterproof Portable pH meter, complete with

- plastic pH electrode (9625-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)



### D-72A-S

Waterproof Portable pH / ORP meter, complete with

- plastic pH electrode (9625-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)



### D-73A-S

Waterproof Portable pH / ORP / Ion meter, complete with

- plastic pH electrode (9625-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)



### D-74A-S

Waterproof Portable pH / ORP / COND meter, complete with

- plastic pH electrode (9625-10D)
- plastic conductivity electrode (9832-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)
- conductivity standard solutions 84 uS, 1413 uS, 12.88 mS, & 111.9 mS (503-S)



### D-75A-S

Waterproof Portable pH / ORP / DO meter, complete with

- plastic pH electrode (9625-10D)
- pH 4/7/10 buffers & 3.33M KCl reference electrolyte (502-S)
- Field dissolved oxygen electrode with 2m cable (9551-20D)



### ES-71A-S

Waterproof Portable Conductivity / Resistivity / Salinity / TDS meter, complete with

- plastic Conductivity electrode (9382-10D)
- conductivity standard solutions 84 uS, 1413 uS, 12.88 mS, & 111.9 mS (503-S)



### OM-71-2A-S

Waterproof Portable Dissolved Oxygen meter, complete with

- Field dissolved oxygen electrode with 2m cable (9551-20D)

pH Solution Kits				
Name	Type	Specification	Remarks	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				
Name	Type	Specification	Remarks	Part No.
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	Remarks	Part No.
Conductivity standard solution kit	503-S	(84 uS/1413 uS/12.88 mS/111.8 mS)	250ml ea	3999960017

Conductivity Solutions				
Name	Type	Specification	Remarks	Part No.
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	Remarks	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	Remarks	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



pH Solutions

Conductivity Solutions

## Electrode Cleaning Solution

- For removing inorganic sample residues from glass electrodes, and for cleaning liquid junctions

Name	Type	Volume (mL)	Part No.
Electrode cleaning solution	220	50 x 2 pcs	3014028653

- For removing protein containing sample residues from glass electrodes, and for cleaning liquid junctions.

Name	Type	Volume (mL)	Part No.
Electrode cleaning solution	250	400	3200366771

- For 9630-10D (pH electrode for tap water or low conductivity sample)

Name	Type	Volume (mL)	Part No.
Electrode cleaning solution	230	Solution A 30 mL Solution B 100 mL	3200530494



Printer (for GLP/GMP compliance)

Digital simulator

FA-70L Electrode stand (long type)

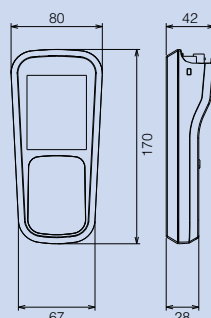
## Accessories

Name	Remarks	Part No.	F-70	DS-70	D-70	ES-70	OM-70
Printer (for GLP/GMP compliance)	Cable sold separately, Plain paper	—					
Printer cable	1.5 m	3014030148					
Printer paper	20 rolls	3014030149	○	○	1	○	○
Ink ribbon	5 pcs/set	3014030150					
AC adapter cable set.	AC adaptor 1.8 m, cable 1 m	—	○	○	○	○	○
Digital simulator X-51	pH, mV, ION, DO simulator	3014028368	○	—	○	—	○
Digital simulator X-52	Conductivity simulator	3014028370	2	○	2	○	—
USB cable	Cable to connect meter and PC.	3200373941	○	○	—	—	—
LCD protection sheet	2 pcs/pack	3200382462	○	○	—	—	—
Protection cover	Protects the meter for F-70, DS-70 series	3200382441	○	○	—	—	—
Analog cable	Analog (alarm) output cable	3014030152	3	3	—	—	—
Serial cable	Cable to connect meter and PC (Serial, 9 pins)	3014030151	○	○	1	○	○
Electrode hook	With function for winding the cable	3200528475	—	—	○	○	○
DP-70S Electrode stand (adjustable type)	With holder for D/ES/OM-70	3200528474	—	—	○	○	○
FA-70S Electrode stand (adjustable type)	Free-standing type. Height 384 mm	3200382557	○	○	○	○	○
FA-70L Electrode stand (long type)	Free-standing type. Height 450~650 mm	3200382560	○	○	○	○	○

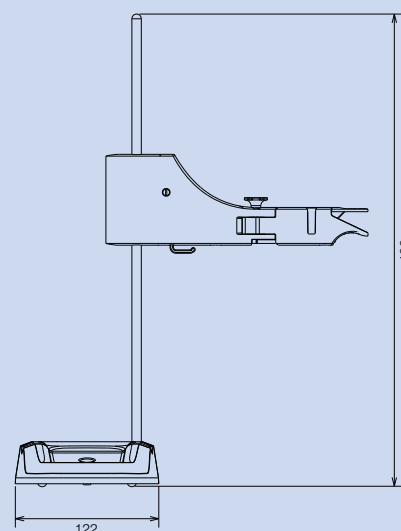
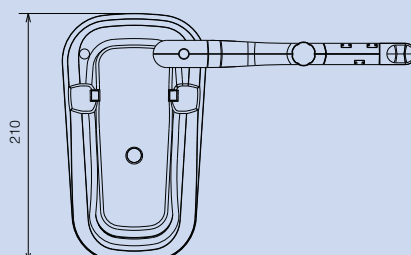
1 Except D-71 2 Conductivity measurement model: F-74/F-74BW/D-74 3 Except F-71/F-74BW/DS-71

Dimensions Unit: mm

D-70 Series / ES-70 Series / OM-70 Series



Electrode Stand (DP-70S)





		D-71	D-72	D-73	D-74	D-75	ES-71	OM-71
pH	Measuring principle	Glass electrode method					—	—
	Range	pH-2.00~16.00					—	—
	Resolution	0.01 pH					—	—
	Repeatability	±0.01 pH±1digit					—	—
	Auto calibration (5 points)/Calibration record	●					—	—
	Standard solution Auto-detect (5 points)	●					—	—
	USA/NIST selectable	●					—	—
Calibration interval alarm		●					—	—
mV (ORP)	Range	—	-2000~2000 mV				—	—
	Resolution	—	1 mV				—	—
	Repeatability	—	±1 mV±1 digit				—	—
	Absolute/relative selectable	—	●				—	—
Temperature	Range	0.0°C~100.0°C						
	Resolution	0.1°C						
	Repeatability	±0.1°C±1digit						
	Calibration function	●						
ION	Measuring principle	—	—	Ion electrode method	—	—	—	—
	Range	—	—	0.00 µg/L~999 g/L	—	—	—	—
	Resolution	—	—	3-digit valid numbers	—	—	—	—
	Repeatability	—	—	±0.5% F.S.±1 digit	—	—	—	—
	5 points calibration/Calibration record	—	—	●	—	—	—	—
Conductivity	Measuring principle	—	—	—	2 AC bipolar method	—	2 AC bipolar method	—
	Range	—	—	—	0.00 µS/cm~2000 mS/cm	—	0.00 µS/cm~2000 mS/cm	—
	Resolution	—	—	—	0.05%F.S.	—	0.05%F.S.	—
	Repeatability	—	—	—	±0.5% F.S.±1 digit	—	±0.5% F.S.±1 digit	—
	Measurement Unit Selection (S/m,S/cm)	—	—	—	●	—	●	—
	Auto temperature conversion (25°C)	—	—	—	●	—	●	—
Salinity	Measuring principle	—	—	—	Conversion from conductivity value	—	Conversion from conductivity value	—
	Range	—	—	—	0.00%~4.00% (0.0PPT~40.0PPT)	—	0.00%~4.00% (0.0PPT~40.0PPT)	—
	Resolution	—	—	—	0.01%/0.1 PPT	—	0.01%/0.1 PPT	—
	Calibration function	—	—	—	●	—	●	—
Resistivity	Measuring principle	—	—	—	Conversion from conductivity value	—	Conversion from conductivity value	—
	Measuring range (Display range)	—	—	—	0.0Ω•cm~20.0MΩ•cm	—	0.0Ω•cm~20.0MΩ•cm	—
	Resolution	—	—	—	0.05%F.S.	—	0.05%F.S.	—
	Repeatability	—	—	—	±0.5%F.S.±1 digit	—	±0.5%F.S.±1 digit	—
TDS	Measuring principle	—	—	—	Conversion from conductivity value	—	Conversion from conductivity value	—
	Range	—	—	—	0.01 mg/L~100 g/L	—	0.01 mg/L~100 g/L	—
	Resolution	—	—	—	0.01 mg/L	—	0.01 mg/L	—
Dissolved Oxygen	Measuring principle	—	—	—	—	Membrane galvanic cell	—	Membrane galvanic cell
	Range	—	—	—	—	0.00~20.00 mg/L	—	0.00~20.00 mg/L
	Temperature compensation	—	—	—	—	0~40°C	—	0~40°C
	Resolution	—	—	—	—	0.01 mg/L	—	0.01 mg/L
	Repeatability	—	—	—	—	±0.1 mg/L±1 digit	—	±0.1 mg/L±1 digit
	Salinity concentration correction (0~40PPT)	—	—	—	—	●	—	●
	Air pressure correction	—	—	—	—	●	—	●
Saturated Oxygen	Measuring principle	—	—	—	—	Membrane galvanic cell	—	Membrane galvanic cell
	Measuring range (Display range)	—	—	—	—	0.0~200.0%	—	0.0~200.0%
	Resolution	—	—	—	—	0.1%	—	0.1%
Oxygen concentration	Measuring principle	—	—	—	—	Membrane galvanic cell	—	Membrane galvanic cell
	Measuring range (Display range)	—	—	—	—	0.0~50.0%	—	0.0~50.0%
	Resolution	—	—	—	—	0.1%	—	0.1%
Display		Custom LCD	Custom LCD with backlight					
Function	PC connectivity	—	●					
	Printer connectivity (GLP/GMP)	—	●					
	Temperature compensation (Auto/manual)	●						
	Auto Hold function	●						
	Data memory	1000						
	Interval memory	—	●					
	ID input	●						
	Clock function	●						
	Auto power off/Battery Level Indicator	●						
Dustproof and waterproof standard		IP67						
Operating ambient temperature/humidity		0°C to 45°C, 80% or less in relative humidity (no condensation)						
Power		LR03/AAA alkaline batteries or AAA Ni-H rechargeable batteries × 2, AC adapter 100 V to 240 V 50/60 Hz (option)						
Current consumption		Less than 1 mA	Less than 1 mA	Less than 2 mA	Less than 5 mA	Less than 2 mA	Less than 5 mA	Less than 2 mA
Battery life		Approx. 1000 hours	Approx. 1000 hours	Approx. 500 hours	Approx. 200 hours	Approx. 500 hours	Approx. 200 hours	Approx. 500 hours
Dimensions		Approx. 67 (80) × 28 (42) × 170 mm (The figures in parentheses are maximum thicknesses.)						
Weight (without batteries and electrode)		Approx. 270 g	Approx. 270 g	Approx. 285 g	Approx. 285 g	Approx. 285 g	Approx. 270 g	Approx. 270 g

With over 60 years of engineering excellence, HORIBA's diverse range of water quality analyzers and electrodes are ideal for everyday laboratory needs through to the most demanding of applications. Visit our website for a wealth of useful information and water quality measurement tips to help you obtain the best results in your work.



### Benchtop Meters

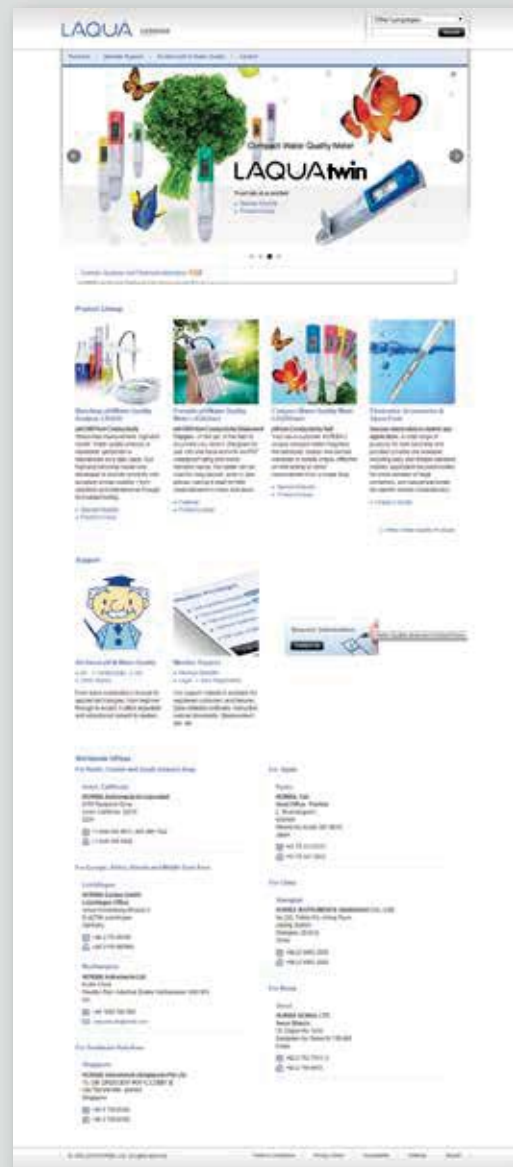
Developed using extensive feedback from users, our new LAQUA meters deliver the best solution for water quality analysis. Our LAQUA website features an online 'Selection Guide' to enable you to find the perfect LAQUA meter and electrode for your need.

### Handheld Meters

In the lab, in the field or anywhere you need it. LAQUA Handheld meters are designed for use with one hand and with an IP67 waterproof rating and shock-resistant casing. Meters can be used for long periods, even in dark places, making it ideal for field measurements in rivers and lakes.

### Pocket Meters

Analyzing water quality is simplified when using our LAQUAtwin range of meters. Designed to produce accurate and reliable results. Anyone, anywhere, at any time can measure samples easily with a LAQUAtwin meter. See just how good they are at our website.



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[www.horiba.com/wq/support](http://www.horiba.com/wq/support)

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- Instruction manual downloads
- Measurement tips, etc.

[www.horiba.co.jp/register](http://www.horiba.co.jp/register)

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- IQ/OQ/PQ support\*
- SOP guidance
- FAQ

\*Optional services



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