HORIBA

# LAQUA

## Benchtop Color Touchscreen Water Quality Meters


| | | | |
|---|---|---|---|
| pH | ORP | Ion | Conductivity |
| Resistivity | Total Dissolved Solids | | Salinity |

METERS 2YEARS WARRANTY

MADE IN JAPAN

www.horiba-laqua.com

# THE HISTORY OF LAQUA

## OUR HUMBLE BEGINNINGS

In 1950, Dr. Masao Horiba pioneered and launched Asia's first pH meter in Kyoto, Japan. Since then, HORIBA has been introducing several of the world's firsts such as the first 0.001 resolution pH meter, the first flat sensor featured in the Cardy, the first wireless pH meter, the first colour LCD display, etc.

**2025**

**LAQUA TB220** | *Portable*
First turbidity meter

**2021**

**LAQUA 2000 Series** | *Benchtop*
Clear black-and-white backlit screen with intuitive, easy-to-use operation

**2018**

**LAQUA 200 Series** | *Handheld*
IP67 handheld meters with enhanced readability

**2012**

**LAQUAtwin** | *Pocket*
Revolutionary flat sensor technology for fast, minimal-sample testing anywhere

**2003**

**F-50** | *Benchtop*
World's first pH meter with colour LCD and guided navigation

**D-50** | *Portable*
Waterproof, IP67-rated housing and multi-parameter

**1990**

**B-111** | *Pen Type*
Sensor allows small samples to be tested

**1980**

**F-80** | *Benchtop*
World's first 0.001 pH resolution meter with automatic calibration and self-diagnostics

**L-7** | *Integrated*
Introduction of a small, handheld pH meter with integrated electrode

**1964**

**M-5** | *Benchtop*
Conversion to semiconductor technology enables miniaturization and faster response

**2024**

**LAQUAtwin ORP-11 & F-11** | *Pocket*
Additions to the LAQUAtwin meters range

**2019**

**LAQUA WQ-300 Series** | *Handheld*
Smart handheld water quality meters with versatile channels & adaptive display

**2013**

**LAQUAact** | *Handheld*
Portable water quality meter for lab and field use

**2011**

**LAQUA F-70 Series** | *Benchtop*
Debut of new water quality analyzer series, starting with color touchscreen benchtop meters

**1993**

**F-20** | *Benchtop*
The world's first wireless pH meter

**1987**

**C-1** | *Card*
Development of the world's first flat sensor

**1977**

**F-7AD** | *Benchtop*
Industry-first LCD display with combined glass, reference and temperature-compensating electrodes, simplifies testing

**1950**

Japan's first glass electrode pH meter

# Contents




Product Overview

LAQUA

# Benchtop Color Touchscreen Water Quality Meters

Touchscreen Precision. The New Benchmark.


### Large Color Touchscreen

- 5.7 inches (115.2 x 86.4mm)


### Effortless Single-Touch Operations

- Tap
- Flick
- Drag


### Super White Glass Panel

- Chemical-resistant
- 2 mm thickness
- Comes with protection cover


### Dual-Channel Display and Simultaneous Measurements

(for F-73 and F-74)

### Easy to Clean and Elegant Round Body

### Small Footprint

- Width: 170 mm
- Depth: 174 mm
- Height: 73 mm


### Compatible with 21 CFR Part 11 Software

- GLP/GMP compliant
- Data acquisition software available


### Switchable Display

- Digital
- Graph
- Analog

# Standard Electrode Stand with Arm

## 360° Electrode Stand Maneuverability

Each meter comes with FA-70S standard electrode stand (Height: 384mm)

- Adjustable arm holds up to 3 electrodes
- 360° rotation of arm for flexible and convenient beaker positioning around the stand
- Arm height adjustment via clip-release mechanism
- Vertical slide of the electrode stand arm controlled by stopper

**Also available:**

FA-70L taller stand with telescopic shaft (Height: 650mm)

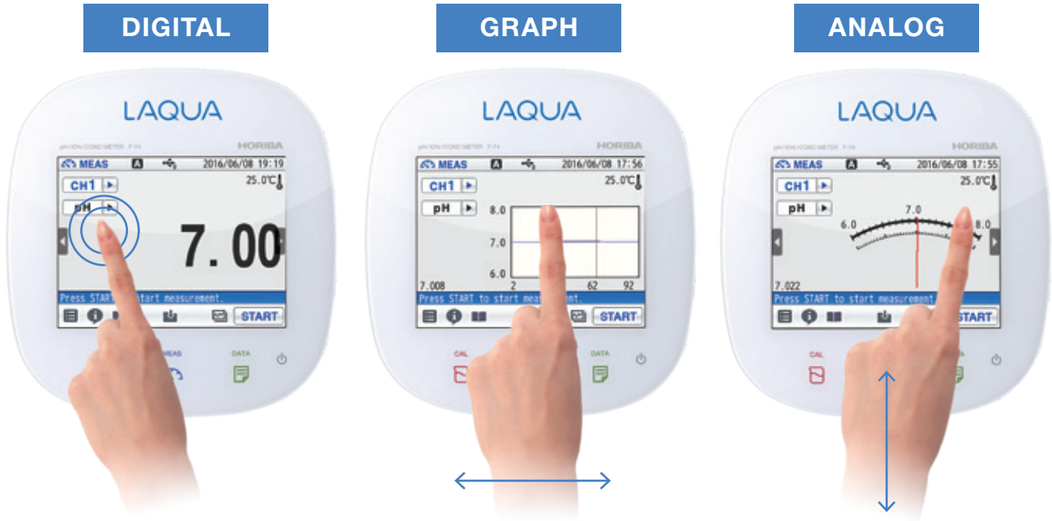

**Detachable Protection Cover**








# Intuitive Touch-Control Operation




## 21 CFR Part 11 Software

Complies with U.S. FDA's system requirements for electronic records and signatures (optional)


## Universal Power Adapter

- Multi-voltage (100-240V)
- 6 types of international standard plugs included: US, UK, EU, Australia / New Zealand, Korea and China

## FD-70 Data Collection Software

Available for download from our website's Software Download Center

**Scan for Software Download Center**

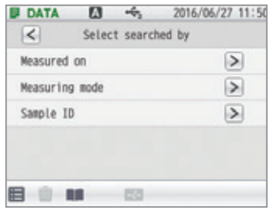
# Data Management

## Data Key

- Data Key shows settings that allow users to search, view, delete and copy data from meter to USB flash drive

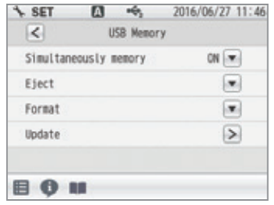

## Data Search

- Data Search allows search by date, parameter or sample ID



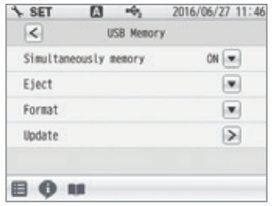

## Data Storage

- Data can be stored simultaneously on both meter and USB flash drive (if inserted)
- Calibration and measurement data are logged automatically at set time interval



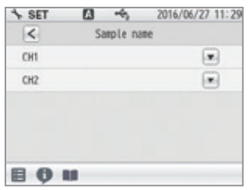

## Custom Printout

- Auto or manual printing of calibration and measurement data for record-keeping
- Customizable printouts based on user preferences or GMP/GLP requirements (date and time, operator, electrode and meter information, electrode status, and calibration data)




## Sample ID

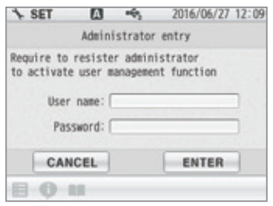
- Meter internal memory stores up to 2000 data with sample ID for easy reference





## Meter Security

- Password setting for security
- Up to 25 administrators or operators can be registered




## Meter Connections

- Data output via USB to PC / USB flash drive or via RS232C to PC / printer (cables sold separately)
- Analog output adjustment: voltage output can be acquired from digital multimeter or recorder connected to the analog output connector





# Smart Navigation

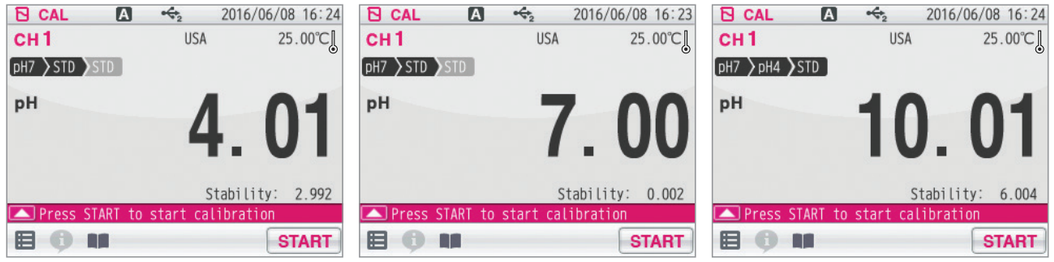

## Intelligent Assistant

Provides step-by-step guidance on calibration, sample measurement, application methods, maintenance, inspection and troubleshooting

## Calibration Support Function

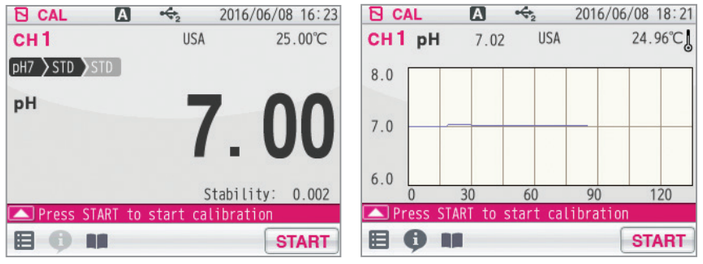
Enjoy hassle-free calibration with on-screen support. The meter will walk you through the steps of calibration.

- Auto Buffer Recognition
- Auto Calibration Function



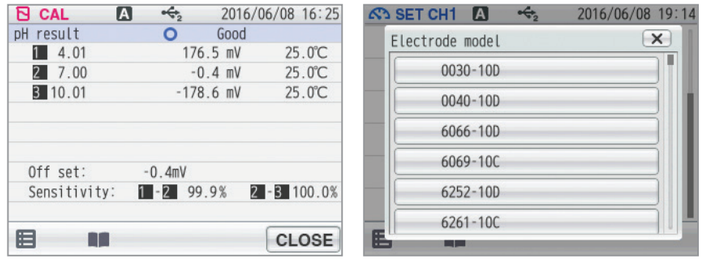

## Reading Stability Check

- Perform proper calibration with stable readings
- Determine the stability of reading at a glance in either digital or graph display during pH and ion calibration
- Stability value is a deviation between the maximum and minimum readings in the last 10 seconds




## Electrode Status

- Electrode condition and results such as calibrated values, offset, acid and alkaline slopes, are shown at the end of calibration
- Programmable calibration reminder and alarm for measured values exceeding set limits
- Temperature indicator appears when a temperature probe or electrode with integrated temperature sensor is connected to the meter
- Temperature sensor calibration function
- Electrode model, either selected from preset list or entered manually, and lot or MFG no. (entered manually) are included in stored data and printouts








## Inspection Function

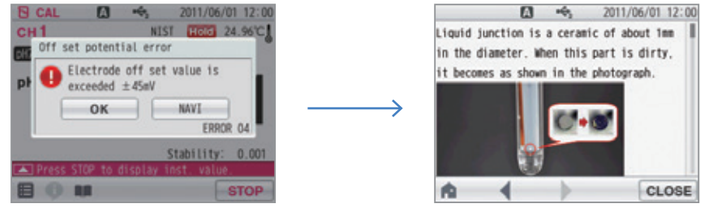
Easy navigation for meter and electrode inspections using a simulator. Various industrial standards (JIS, USP, EP, JP, CP) are also supported. Convenient for IQ / OQ / PQ validation.


Start inspection

Display result after inspection

## Troubleshooting Function

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.

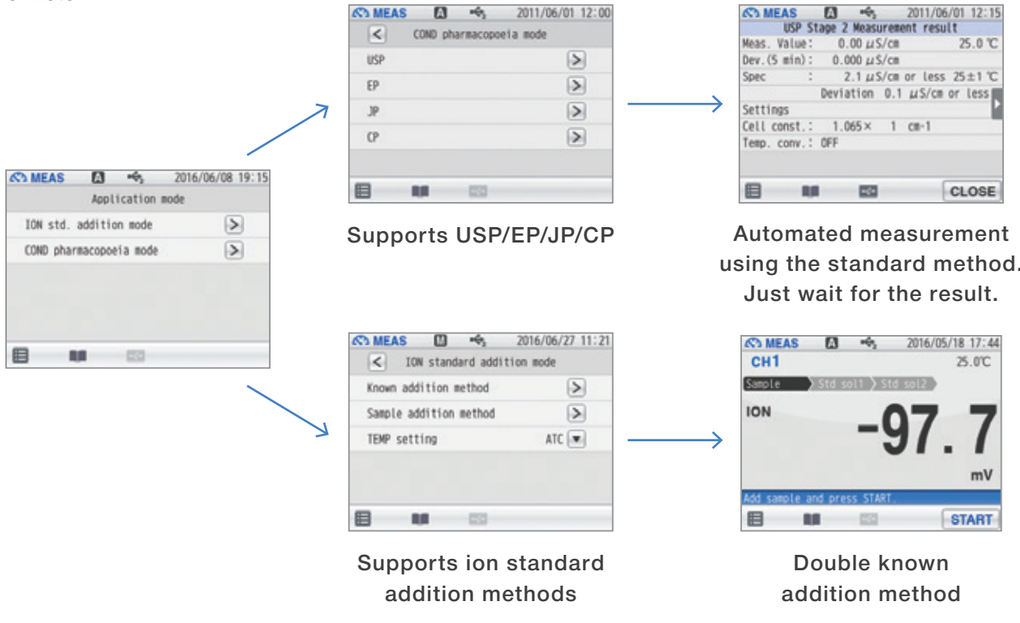



Start troubleshooting

Display tip

## Application Functions

Various industry standard methods are supported by the instrument. Conductivity measurement for several pharmaceutical pure water guidelines and ion standard addition methods are incorporated in the meter.




Supports USP/EP/JP/CP

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

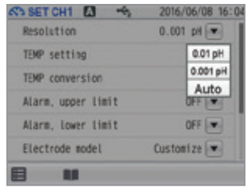
Supports ion standard addition methods

Double known addition method

# Advanced Features

## pH

- Up to 5 calibration points
- 0.01 and 0.001 pH Resolutions
- Auto setting allows the meter to toggle between 0.01 and 0.001 resolution depending on the stability of the reading
- Auto calibration / Auto buffer recognition





| pH Buffer Group | pH Buffer Values at 25°C |
|---|---|
| USA | 1.68, 4.01, 7.00, 10.01, 12.45 |
| NIST | 1.68, 4.01, 6.86, 9.18, 12.45 |
| NIST2 | 1.68, 4.01, 6.86, 10.01, 12.45 |
| China | 1.68, 4.01, 6.86, 9.18, 12.46 |
| Custom | any pH buffers |

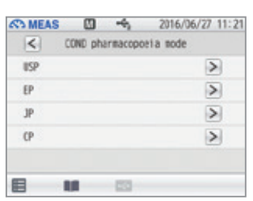
## ORP

- Capable of 1-point calibration



## Conductivity

- Automatic / manual calibration up to 4 points
- Adjustable temperature coefficient and reference temperature for temperature compensated readings
- Selectable cell constants: 0.1, 1.0, 10.0
- Auto ranging S/cm and S/m units, fix mS/cm unit
- Support conductivity standard methods for pharmaceutical water: USP, EP, JP and CP

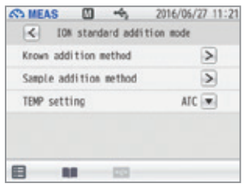

## mV

- Display absolute potential and relative potential



## Ion

- Make your own calibration curve with maximum of 5 points or perform standard addition techniques
- Programmed with standard addition methods: known addition and sample addition (single and double are available for both methods)
- Measurement units: µg/L, mg/L, g/L, mmol/L, mol/L





## Total Dissolved Solids (TDS)

- Programmed with 4 predetermined TDS curves for accurate measurement: Linear, EN27888, 442 and NaCl
- Select the TDS curve suitable for your application
- Calibration only in conductivity mode is required

| TDS Calibration Curves | | |
|---|---|---|
| Application | Key Chemical Species | TDS Selection |
| Aquaculture, pickling | NaCl | NaCl |
| Boiler water, HVAC | $Na_2SO_4$, $NaHCO_3$, NaCl | 442 (Myron) |
| Environmental | EN standard for environmental water | EN 27888 |
| General application | Not known | KCl (linear) Default: 0.5 Selectable: 0.4 to 1.0 |

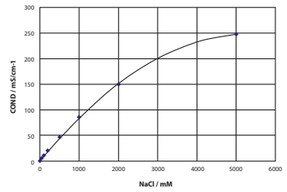


## Salinity

- Programmed with 2 predetermined salinity curves: NaCl and seawater
- Salinity value is calculated based on measured conductivity value
- 1-point calibration using standard solution
- Measurement units: percentage (%) and parts per thousand (ppt)



NaCl Curve



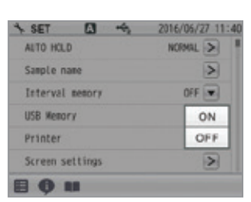

## Auto Stable / Auto Hold

- In measurement mode, the meter displays live readings continuously
- Activate auto hold by tapping START
- Auto hold settings: Exact, Normal, Brief, Time, Customize and Manual



## Auto Log Data

- Log data automatically by setting time interval from 1 to 999 seconds





## Multi-Language

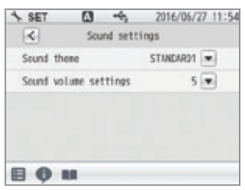
- Choose a language that you are familiar with: English, Japanese, Chinese, Korean or Vietnamese

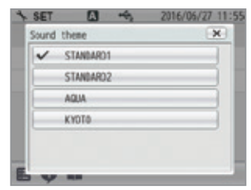

## Screen Settings

- Set stylish theme on your meter screen: Standard, Cool, Monotone and Kyoto
- Power saving mode turns off the backlight to save power


## Sound Setting

- Play a click sound every time you tap a key



# F-72 and F-73

**Benchtop Meters**
pH/ORP/Ion/Temp (°C)


## Features

- Up to 5 Calibration Points for pH and Ion
- 5 pH Buffer Groups: USA, NIST, NIST2, China and Custom
- 0.01 and 0.001 pH Resolutions
- pH Calibration
- Interval Setting: 1 to 999 days
- 1-point ORP Calibration
- Ion Calibration Curve and Standard Addition Methods
- Temperature Sensor Calibration Function
- Single Channel for F-72 and Dual Channel Display for F-73

## Ordering Information

| | | | |
|---|---|---|---|
| **Meter Kit*** |  **F-72A-S (3999960011)**<br>• F-72 meter<br>• Electrode stand<br>• Protection cover<br>• Power adaptor with 6 plugs<br>• 9615S-10D: refillable, glass-body pH electrode with integrated temperature sensor, 1m cable, BNC & phono jack<br>• 502-S: pH 4.01, 7.00, 10.01, 3.33M KCl solutions (250ml each) |  **F-73A-S (3999960012)**<br>• F-73 meter<br>• Electrode stand<br>• Protection cover<br>• Power adaptor with 6 plugs<br>• 9615S-10D: refillable, glass-body pH electrode with integrated temperature sensor, 1m cable, BNC & phono jack<br>• 502-S: pH 4.01, 7.00, 10.01, 3.33M KCl solutions (250ml each) |  **F-72NBA-S (4000079440)**<br>• F-72 meter#<br>• Electrode stand<br>• Protection cover<br>• Power adaptor with 6 plugs<br>• 9615S-10D: refillable, glass-body pH electrode with integrated temperature sensor, 1m cable, BNC & phono jack<br>• 502-S: pH 4.01, 7.00, 10.01, 3.33M KCl solutions (250ml each) |
| **Meter Kit with 21 CFR Part 11 Software** | **F-72A-S-CFR (3999960210)** | **F-73A-S-CFR (3999960212)** | — |
| **Meter with Electrode Stand** | **F-72G (3200575120)**<br>• F-72 meter<br>• Electrode stand<br>• Protection cover<br>• Power adaptor with 6 plugs | **F-73G (3200575123)**<br>• F-73 meter<br>• Electrode stand<br>• Protection cover<br>• Power adaptor with 6 plugs | — |
| **pH Electrode** | **9615S-10D (3200585428)**<br>Refillable, glass-body pH electrode with integrated temperature sensor, 1m cable, BNC & phono jack | | |
| **USA pH Buffer Set** | **502-S (3999960016)**<br>pH 4.01, 7.00, 10.01, 3.33M KCl solutions (250ml each) | | |
| **NIST pH Buffer Set** | **501-S (3999960015)**<br>pH 4.01, 6.86, 9.18, 3.33M KCl solutions (250ml each) | | |

*Kit with 501-S is available upon request. Add 'N' suffix to the order code when ordering.
#Modified firmware: Custom1 buffer group setting (1.679, 4.008, 7.000, 9.180 and 12.454)



## Meter Specifications

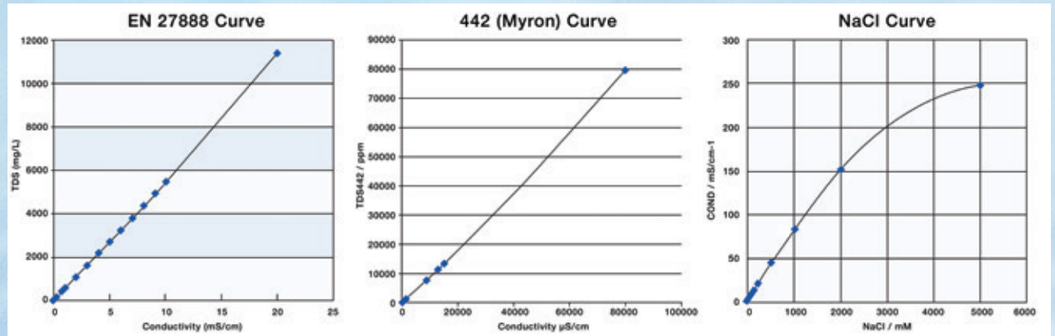
| Model | F-72 pH/ORP/Ion/Temp (°C) | F-73 pH/ORP/Ion/Temp (°C) |
|---|---|---|
| **Channels** | Single | Dual |
| **pH Range** | -2.000 to 20.000 pH | |
| Resolution | 0.01 / 0.001 pH | |
| Accuracy | ± 0.001 pH | |
| Calibration Points | Up to 5 | |
| Buffer Options | USA, NIST, NIST2, China, Custom | |
| **ORP Range** | ± 1999.9 mV | |
| Resolution | 0.1 mV | |
| Accuracy | ±0.2 mV | |
| **Ion Range** | 0.000 µg/L to 9999 g/L (mol/L) | |
| Resolution | 4 significant digits | |
| Accuracy | ± 0.3% of full scale | |
| Calibration Points | Up to 5 | |
| **Temperature Range** | -30.0 °C to 130.0 °C | |
| Resolution | 0.1 °C | |
| Accuracy | ±0.4°C | |
| Calibration Points | ✓ | |
| **Navigation Function** | ✓ | |
| **Memory** | 2000 | |
| **Auto Data-Logging** | ✓ | |
| **Data Search** | ✓ | |
| **Custom Printing** | ✓ | |
| **Real Time Clock** | ✓ | |
| **Date / Time Stamp** | ✓ | |
| **Sample ID Input** | ✓ | |
| **Operator ID Input** | ✓ | |
| **Password Setting** | ✓ | |
| **Auto Stable / Auto Hold** | ✓ | |
| **Offset / Slope Display** | ✓ (independent acid and alkaline slopes depending on calibration) | |
| **Calibration Alarm Limit** | ✓ | |
| **Electrode Status** | On screen display | |
| **Diagnostic Messages** | ✓ | |
| **Display** | Touch screen color graphic LCD | |
| **Languages** | English / Japanese / Chinese / Korean / Vietnamese | |
| **Inputs** | BNC, phono, DC socket | Dual BNC, dual phono, DC socket |
| **Outputs** | USB, RS232C, analog output | |
| **Power Requirements** | AC adaptor 100 ~ 240V, 50/60 Hz | |
| **Electrode Stand** | Stand alone | |
| **Weight** | 700g | |
| **Dimensions** | 170 (W) x 174 (D) x 73 (H) mm | |

# DS-72

**Benchtop Meter**
Conductivity/Resistivity/Total Dissolved Solids/
Salinity/Temp (°C)


## Features

- Wide Conductivity Range
- Automatic/Manual Conductivity Calibration
- Up to 4 Calibration Points
- Adjustable Temperature Coefficient, Reference Temperature and Cell Constant
- Temperature Sensor Calibration Function
- Auto Ranging S/cm and S/m and Fix mS/cm Conductivity Units
- Parts per Thousand (ppt) and Percentage (%) Salinity Units
- NaCl and Seawater Salinity Curves
- 4 Total Dissolved Solids (TDS) Curves: EN27888, Linear, NaCl, 442




## Ordering Information

| | | |
|---|---|---|
| **Meter Kit** |  <br>**DS-72A-S (3999960013)**<br>• DS-72 meter<br>• Electrode stand<br>• Protection cover<br>• Power adaptor with 6 plugs<br>• 3552-10D: Platinum/Platinum black, glass-body k=1.0 conductivity cell with integrated temperature sensor, 1m cable, BNC & phono jack<br>• 503-S: 84µS/cm, 1413µS/cm, 12.88mS/cm & 111.8mS/cm conductivity standard solutions (250ml each) |  <br>**DS-72HMA-S (4000079441)**<br>• DS-72 meter^<br>• Electrode stand<br>• Protection cover<br>• Power adaptor with 6 plugs<br>• 9371-10D: Stainless steel k=0.1 conductivity cell with integrated temperature sensor, 1m cable, BNC & phono jack<br>• 503-S: 84µS/cm, 1413µS/cm, 12.88mS/cm & 111.8mS/cm conductivity standard solutions (250ml each) |
| **Meter Kit with 21 CFR Part 11 Software** | **DS-72A-S-CFR (3999960216)** | — |
| **Conductivity Cell** | **3552-10D (3014081545)**<br>Platinum/Platinum black, glass-body k=1.0 conductivity cell with integrated temperature sensor, 1m cable, BNC & phono jack | |
| **Conductivity Standard Solutions Set** | **503-S (3999960017)**<br>84µS/cm, 1413µS/cm, 12.88mS/cm & 111.8mS/cm conductivity standard solutions (250ml each) | |

^Modified firmware: Automatic recognition of 100µS/cm conductivity standard solution instead of 84µS/cm when automatic calibration setting is ON.





## Meter Specifications

| | DS-72<br>Conductivity/Resistivity/Total Dissolved Solids/Salinity/Temp (°C) |
|---|---|
| **Model** | |
| **Channels** | Single |
| **Conductivity Range** | 0.000 µS/cm to 19.99 mS/cm (k=0.1)<br>0.00 µS/cm to 199.9 mS/cm (k=1.0)<br>0.0 µS/cm to 1.999 S/cm (k=10.0) |
| Resolution | 0.05% of full scale |
| Accuracy | ±0.6% of full scale (±1.5% full scale > 18.0 mS/cm) |
| Reference Temperature | 15 to 30°C (adjustable) |
| Temperature Coefficient | 0.00 to 10.00% (adjustable) |
| Cell Constants | 0.1 / 1.0 / 10.0 |
| Calibration Points | 4 (Auto / Manual) |
| Measurement Units | Auto-Ranging / Manual<br>S/cm, S/m, Fix (mS/cm) |
| **Total Dissolved Solids Range** | 0.01 mg/L to 1000 g/L |
| Resolution | 0.01 mg/L |
| Accuracy | ±0.1% of full scale |
| TDS Curves | EN27888, Linear (0.40 to 1.0), 442, NaCl |
| **Resistivity Range** | 0.00 kΩ.cm to 199.9 MΩ•cm (k=0.1)<br>0.000 kΩ.cm to 19.99 MΩ•cm (k=1.0)<br>0.0 Ω.cm to 1.999 MΩ•cm (k=10.0) |
| Resolution | 0.05% of full scale |
| Accuracy | ±0.6% of full scale (±1.5% full scale > 1.80 MΩ•cm) |
| **Salinity Range** | 0.00 to 80.00 ppt / 0.000 to 8.000% |
| Resolution | 0.01 ppt / 0.001% |
| Accuracy | 0.2% of full scale |
| Salinity Curves | NaCl / Seawater |
| **Temperature Range** | -30.0 °C to 130.0 °C |
| Resolution | 0.1 °C |
| Accuracy | ± 0.4 °C |
| **Navigation Function** | ✓ |
| **Memory** | 2000 |
| **Auto Data-Logging** | ✓ |
| **Data Search** | ✓ |
| **Custom Printing** | ✓ |
| **Real Time Clock** | ✓ |
| **Date / Time Stamp** | ✓ |
| **Sample ID Input** | ✓ |
| **Operator ID Input** | ✓ |
| **Password Setting** | ✓ |
| **Auto Stable / Auto Hold** | ✓ |
| **Diagnostic Messages** | ✓ |
| **Display** | Touch screen color graphic LCD |
| **Languages** | English / Japanese / Chinese / Korean / Vietnamese |
| **Inputs** | BNC, phono, DC socket |
| **Outputs** | USB, RS232C, analog output |
| **Power Requirements** | AC adaptor 100~240V, 50/60 Hz |
| **Electrode Stand** | Stand alone |
| **Weight** | 700g |
| **Dimensions** | 170 (W) x 174 (D) x 73 (H) mm |

# F-74

**Benchtop Meter**
pH/ORP/Ion/Conductivity/Resistivity/
Total Dissolved Solids/Salinity/Temp (°C)


## Features

- Combined Functions of F-72 and DS-72 Models
- Dual Channel and Simultaneous Measurements
  Channel 1: pH, Ion, mV, ORP
  Channel 2: Conductivity, Salinity, Resistivity and TDS
- Switchable Single or Dual Channel Display


Channel 1: pH


Channel 2: Conductivity


Dual Channel

## Ordering Information

| | |
|---|---|
| **Meter Kit** |  <br>**F-74A-S (3999960014)**<br>• F-74 meter<br>• Electrode stand<br>• Protection cover<br>• Power adaptor with 6 plugs<br>• 9615S-10D: refillable, glass-body pH electrode with integrated temperature sensor, 1m cable, BNC & phono jack<br>• 3552-10D: Platinum/Platinum black, glass-body k=1.0 conductivity cell with integrated temperature sensor, 1m cable, BNC & phono jack<br>• 502-S: pH 4.01, 7.00, 10.01, 3.33M KCl solutions (250ml each)<br>• 503-S: 84µS/cm, 1413µS/cm, 12.88mS/cm & 111.8mS/cm conductivity standard solutions (250ml each) |
| **Meter Kit with 21 CFR Part 11 Software** | **F-74A-S-CFR (3999960214)** |
| **Meter with Electrode Stand** | **F-74G (3200575130)**<br>• F-74 meter • Electrode stand • Protection cover • Power adaptor with 6 plugs |
| **pH Electrode** | **9615S-10D (3200585428)**<br>Refillable, glass-body pH electrode with integrated temperature sensor, 1m cable, BNC & phono jack |
| **Conductivity Cell** | **3552-10D (3014081545)**<br>Platinum/Platinum black, glass-body k=1.0 conductivity cell with integrated temperature sensor, 1m cable, BNC & phono jack |
| **USA pH Buffer Set** | **502-S (3999960016)**<br>pH 4.01, 7.00, 10.01, 3.33M KCl solutions (250ml each) |
| **NIST pH Buffer Set** | **501-S (3999960015)**<br>pH 4.01, 6.86, 9.18, 3.33M KCl solutions (250ml each) |
| **Conductivity Standard Solutions Set** | **503-S (3999960017)**<br>84µS/cm, 1413µS/cm, 12.88mS/cm & 111.8mS/cm conductivity standard solutions (250ml each) |

*Kit with 501-S is available upon request. Add 'N' suffix to the order code when ordering.





## Meter Specifications

| Model | F-74<br>pH/ORP/Ion/Conductivity/Resistivity/Total Dissolved Solids/Salinity/Temp (°C) |
|---|---|
| **Channel** | Dual |
| **pH Range** | -2.000 to 20.000 pH |
| Resolution | 0.01 / 0.001 pH |
| Accuracy | ± 0.001 pH |
| Calibration Points | Up to 5 |
| Buffer Options | USA, NIST, NIST2, China, Custom |
| **ORP Range** | ± 1999.9 mV |
| Resolution | 0.1 mV |
| Accuracy | ± 0.2 mV |
| **Ion Range** | 0.000 µg/L to 9999 g/L (mol/L) |
| Resolution | 4 significant digits |
| Accuracy | ± 0.3% of full scale |
| Calibration Points | Up to 5 |
| **Conductivity Range** | 0.000µS/cm to 19.99mS/cm (k=0.1)<br>0.00 µS/cm to 199.9 mS/cm (k=1.0)<br>0.0 µS/cm to 1.999 S/cm (k=10.0) |
| Resolution | 0.05% of full scale |
| Accuracy | ±0.6% of full scale (±1.5% full scale > 18.0 mS/cm) |
| Reference Temperature | 15 to 30°C (adjustable) |
| Temperature Coefficient | 0.00 to 10.00% (adjustable) |
| Cell Constants | 0.1 / 1.0 / 10.0 |
| Calibration Points | 4 (Auto / Manual) |
| Measurement Units | Auto Ranging / Manual (S/cm, S/m, Fix (mS/cm) |
| **Total Dissolved Solids Range** | 0.01 mg/L to 1000 g/L |
| Resolution | 0.01 mg/L |
| Accuracy | ±0.1% of full scale |
| Total Dissolved Solids Curves | EN27888, Linear (0.40 to 1.0), 442, NaCl |
| **Resistivity Range** | 0.00 kΩ.cm to 199.9 MΩ•cm (k=0.1)<br>0.000 kΩ.cm to 19.99 MΩ•cm (k=1.0)<br>0.0 Ω.cm to 1.999 MΩ•cm (k=10.0) |
| Resolution | 0.05% of full scale |
| Accuracy | ±0.6% of full scale (±1.5% full scale > 1.80 MΩ•cm) |
| **Salinity Range** | 0.00 to 80.00 ppt / 0.000 to 8.000 % |
| Resolution | 0.01 ppt / 0.001% |
| Accuracy | 0.2% of full scale |
| Salinity Curves | NaCl / Seawater |
| **Temperature Range** | -30.0 °C to 130.0 °C |
| Resolution | 0.1 °C |
| Accuracy | ± 0.4 °C |
| **Navigation Function** | ✓ |
| **Memory** | 2000 |
| **Auto Data-Logging** | ✓ |
| **Data Search** | ✓ |
| **Custom Printing** | ✓ |
| **Real Time Clock** | ✓ |
| **Date / Time Stamp** | ✓ |
| **Sample ID Input** | ✓ |
| **Operator ID Input** | ✓ |
| **Password Setting** | ✓ |
| **Auto Stable / Auto Hold** | ✓ |
| **Offset / Slope Display** | ✓ (independent acid and alkaline slopes depending on calibration) |
| **Calibration Alarm Limit** | ✓ |
| **Electrode Status** | On screen display |
| **Diagnostic Messages** | ✓ |
| **Display** | Touch screen color graphic LCD / dual channel display |
| **Languages** | English / Japanese / Chinese / Korean / Vietnamese |
| **Inputs** | Dual BNC, dual phono, DC socket |
| **Outputs** | USB, RS232C, analog output |
| **Power Requirements** | AC adaptor 100~240V, 50/60 Hz |
| **Electrode Stand** | Stand alone |
| **Weight** | 700g |
| **Dimensions** | 170 (W) x 174 (D) x 73 (H) mm |


# Our Selection of Electrodes



Our Selection of Electrodes

**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.

# pH Electrode 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 | 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 | 0-60 | 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 | 12 | 8 | 3 | 12 | 12 | 12 | 16 | 12 | 3 | 12 | 3 | 8 | 12 | 16 | 12 |
| Length (mm) | 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

# pH Electrodes

Scan for More Electrode Options

## STANDARD ToupH Glass Electrode

**9615S-10D**

water proof · Pb Free

### Reliable measurements across a wide range of sample types

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

- 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.

## STANDARD Plastic Electrode

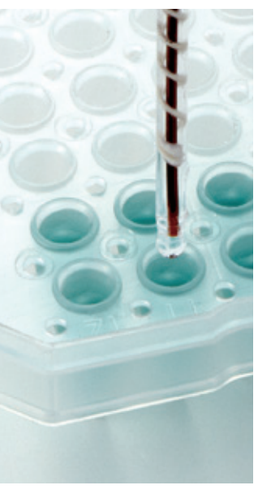
**9625-10D**

water proof · Pb Free

### Stable and accurate performance for routine testing

**Ideal for general purpose use. For measurement of tap water and drinking water.**

- The electrode has a plastic body which is ideal for general purpose measurement.
- Can be submerged up to 1m depth and 30mins (with refilling port closed)



## MICRO ToupH Glass Electrode

**9618N-10D**

water proof

### Optimized for measuring extremely small sample volumes

**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.**

- 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.



## LONG ToupH Glass Electrode

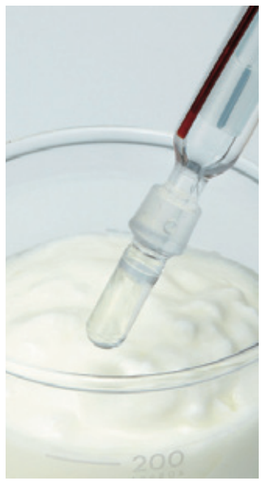
**9680S-10D**

water proof · Pb Free

### Designed for measurements in large or deep containers

**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).**

- 283 mm length and 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.



## SLEEVE ToupH Glass Electrode

**9681S-10D**

water proof · Pb Free

### Ideal for highly viscous samples and solutions with non-aqueous solvents

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

- Stable measurement can also be achieved for high viscous samples.
- The liquid junction section is constructed with a movable sleeve that can be rinsed clean, preventing highly viscous samples from clogging the liquid junction, and maintaining stable measurement performance

## GENERAL ISFET pH Electrode

**0040N-10D**

water proof

### Specialized for surface measurements on solid samples

**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

# Combination Ion Selective Electrodes

## 5002S-10C Ammonia ($NH_3$) Electrode

3200698386

Scan for More Electrode Options

### Applications:

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

| pH range | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| pH 12 or more | 0.01 - 18,000 mg/L $NH_4^+$ ($5 \times 10^{-7}$ to 1 mol/L $NH_4^+$) | 0-50 |

## 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

| pH range | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 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 |

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

3201099768

### Applications:

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

| pH range | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 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 |

## 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

| pH range | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 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 |



## 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

| pH range | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 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 |

## 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

| pH range | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 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 |

# ORP Electrode

Scan for More Electrode Options

## 9300-10D Standard ORP Electrode

3014046710

### For General Laboratory Application

- Waterproof
- Refillable with 3.33M KCl
- Integrated with temperature sensor

| Electrode Material | Operating temperature range (°C) | Liquid junction |
|---|---|---|
| Pt / Glass | 0-60 | Ceramic |

# Conductivity Electrodes

## Submersible Type

Scan for More Electrode Options

### 3551-10D Conductivity Cell

3014081712

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

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 50 ml
- Integrated with temperature sensor

| Cell Constant | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 0.1 $cm^{-1}$ | 0.1 µS/cm - 10 mS/cm | 0-60 |
| 10 $m^{-1}$ | 10 µS/m - 1 S/m | 0-60 |

### 3552-10D Conductivity Cell

3014081545

**For General Application**

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 15 ml
- Integrated with temperature sensor

| Cell Constant | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 1 $cm^{-1}$ | 1 µS/cm - 100 mS/cm | 0-100 |
| 100 $m^{-1}$ | 0.1 mS/m - 10 S/m | 0-100 |

### 3553-10D Conductivity Cell

3014081714

**For High Conductivity Water**

- Cell Material: Pt–Pt black / Glass
- Minimum sample volume: 50 ml
- Integrated with temperature sensor

| Cell Constant | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 10 $cm^{-1}$ | 10 µS/cm - 1 S/cm | 0-60 |
| 1000 $m^{-1}$ | 1 mS/m - 100 S/m | 0-60 |

### 9371-10D Conductivity Cell

3200878882

**For Low Conductivity Water and Ultra-Pure Water**

- Cell Material: Stainless Steel
- Minimum sample volume: 20-30 ml
- Integrated with temperature sensor

| Cell Constant | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 0.1 $cm^{-1}$ | 0.01 µS/cm - 500 µS/cm | 0-100 |
| 10 $m^{-1}$ | 1 µS/m - 50 mS/m | 0-100 |



### 9382-10D Conductivity Cell

3014046709

**For General Application**

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

| Cell Constant | Measurement Range | Operating temperature range (°C) |
|---|---|---|
| 1 $cm^{-1}$ | 1 µS/cm - 100 mS/cm | 0-80 |
| 100 $m^{-1}$ | 0.1 mS/m - 10 S/m | 0-80 |

## Flow Type

### 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) |
|---|---|---|
| 10 $cm^{-1}$ | 10 µS/cm - 100 mS/cm | 0-60 |
| 1000 $m^{-1}$ | 1 mS/m - 10 S/m | 0-60 |

# Accessories and Solutions

## 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) |

501-S NIST pH Buffers Kit

502-S USA pH Buffers Kit

500-2 pH 1.68 Buffer

500-12 pH 12.46 Buffer

## 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) |

ORP Standard Solution 225 mV

ORP Powders

## 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) |

503-S Conductivity Standards Kit



## 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) |

220 Cleaning Solution

230 Cleaning Solution

## 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) |

## 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) |

250 Cleaning Solution

3.33M KCl 250ml

# 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 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) |

Ammonia Ion Electrode Solutions

Ammonium Ion Electrode Solutions

Calcium Ion Electrode Solutions

Chloride Ion Electrode Solutions

Fluoride Ion Electrode Solutions

Nitrate Ion Electrode Solutions

Potassium Ion Electrode Solutions

Sodium Ion Electrode Solutions



# Accessories

| Part No. | Model | Description |
|---|---|---|
| 3200707161 | LAQUA-SW-21CFR11 | 21 CFR Part 11 Software includes CD with PIN code, USB cable, and manual |
| 3014030147 | | 230v Printer (for GLP/GMP compliance) Cable sold separately, Plain paper |
| 3014030146 | | 120v Printer (for GLP/GMP compliance) Cable sold separately, Plain paper |
| 3014030148 | | Printer cable (1.5 m) |
| 3014030149 | | Printer paper (20 rolls) |
| 3014030150 | | Ink ribbon (5 pcs/set) |
| 3200869791 | | Multi-Voltage (100-240V) with 6 plugs, (US, UK, EU, ANZ, Korea and China), 1.8 m cable |
| 3200382441 | | Protection cover (for F-70, DS-70, 1000 series) |
| 3200373941 | | USB cable (for meter-PC connection) |
| 3014030152 | | Analog cable (for analog alarm output) |
| 3014030151 | | Serial cable (for meter-PC (9pins serial) connection) |
| 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 |
| 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 etc.), 5 pcs/pack |
| 3200844642 | | Glass flow cell (for 300-2C-C and 9371-10D) |

21 CFR Part 11 Software

Printer

Printer Cable

Ink Ribbon

Printer Paper

Universal AC adapter

Protection cover

USB cable

Serial cable

Clear pH Sensor Tip Guard

Glass Flow Cell

FA-70S Adjustable Electrode Stand

FA-70L Long Electrode Stand

Arm for Electrode Stand

Electrode Protection Caps (5 pcs/pack)



Electrode Protection Caps for Long Electrode

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