Water Analysis

Instruments and Sensors

pH | ORP | Conductivity | TDS | Salinity

Water Hardness | Turbidity | Dissolved Oxygen | Na^+ | Ca^{2+}

K^+ | NO_3^- | NH_4^+ | F^- | Cl^-

APERA® INSTRUMENTS

Fluid Precision since 1991

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Fluid Precision since 1991

About Apera Instruments

Apera Instruments excels in delivering measurement solutions for pH, ORP, conductivity, TDS, salinity, dissolved oxygen, turbidity, and a variety of other ions with our industry-leading technologies, quality control system, and customer service.

We have been focused on the development and manufacture of water analysis instruments and sensors since 1991. Millions of Apera products are being used by customers in over 60 countries. All the products are CE and RoHS certified, and are manufactured in our ISO 9001:2015 certified factory.

For over 33 years, we have strived to empower individuals, organizations, and communities to better understand and manage water quality by providing innovative and user-friendly products that meet the needs of all users, from scientists and researchers to students, operators, business owners, and hobbyists. Through our work, we aim to create a more sustainable future for our planet where everyone has access to accurate and reliable water quality testing technology.

This catalog covers the majority of our products. You can find the complete product portfolio on our website at aperainst.com and some helpful videos at youtube.com/@aperainst

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By Parameter

pH

01/07/13/15 Pocket pH Testers
17/21/31/33/39 Portable pH Meters
41/43/47/51 Benchtop pH Meters
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ORP

01/07/15 Pocket ORP Testers
32 Portable ORP Meters
61 ORP Electrodes

Conductivity

(TDS/Salinity/Resistivity)

01/07/13/15 Pocket Conductivity Testers
17/21/31/33 Portable Conductivity Meters
41/43/47/51 Benchtop Conductivity Meters
59/60 Conductivity Electrodes

Dissolved Oxygen

31 Portable Polarographic DO Meters
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Turbidity

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Ions

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Multi-Parameter

01/07/13/15 Multi-Parameter Pocket Testers
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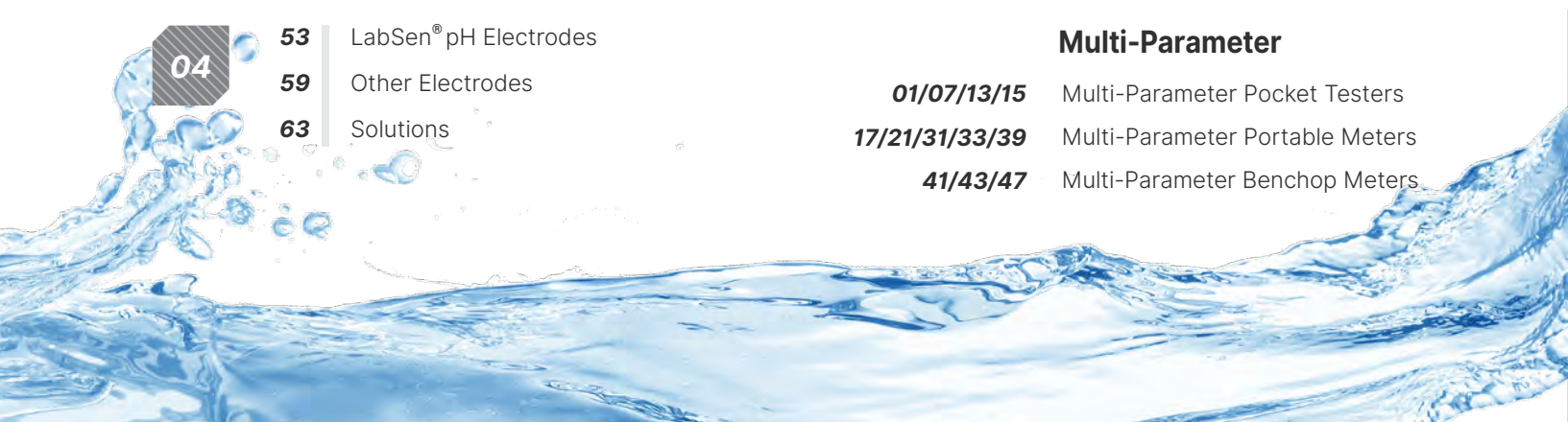
41/43/47 Multi-Parameter Benchop Meters



ZenTest® Smart Pocket Testers

ZENTEST™

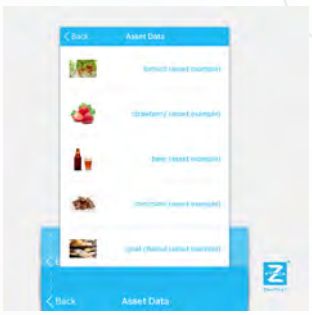
Download on the App Store

android

ZenTest App Features and Functions

Various Display Modes

Instant Data Share



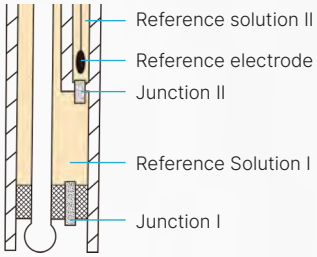
Asset Management

Cloud-based Data Logger

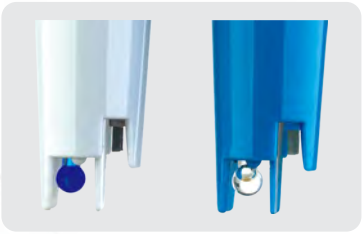
Probe Features

1 **The pH and ORP probes adopt double-junction structure – ideal for measuring complex and dirty water solutions, and effectively extends probe's service life.**

Double-junction reference electrodes have two junctions and two reference solutions. Junction II will not contact test solutions directly so that the chance of contamination by test solutions is minimized. Additionally, reference solution I does not contain silver ion, which can significantly lower the risk of junction clogging over time.



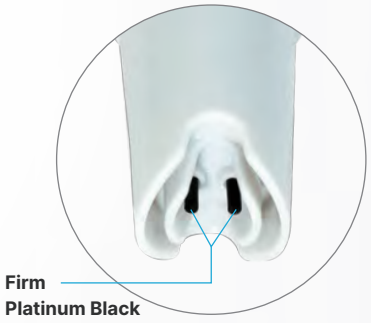
2 **Blue gel inner solution – Say goodbye to air bubbles**



The inner solution in pH electrode's glass bulbs are conventionally in liquid form, which could generate air bubbles when using. If not removed properly, the air bubbles could cause measurement failure. The ZenTest series pH probes adopt a unique blue gel inner solution, which would not flow and never generates air bubbles. The meter can function well even when being placed upside down.

3 **Conductivity probe adopts firm platinum black sensor – accurate and durable**

The platinum black coating process is the most effective method to reduce polarization of conductivity electrodes and extend the measuring range. However, the traditional platinum black coating is very delicate. A slight wipe will damage the coating and cause the conductivity electrode to fail. The ZenTest series conductive electrodes are crafted with a special process to make the platinum black coating firm enough to withstand brush-cleaning, while generating accurate readings in a wide range (0 to 200,000 µS/cm).



4 **6 types of replaceable probes for your choice**

PH60-DE
(glass bulb sensor)
general water solutions
pH test

PH60F-DE
(flat sensor)
flat surface and
small-volume pH test

PH60S-DE
(spear sensor)
soft solid sampling
pH test

ORP60-DA
(platinum)
ORP (redox) Test

EC60-DE
(platinum black)
cond./TDS/salintiy/
resistivity test

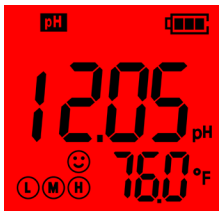
PC60-DE
(combo)
pH/cond./TDS/salintiy/
resistivity test

ZenTest® Smart Pocket Testers

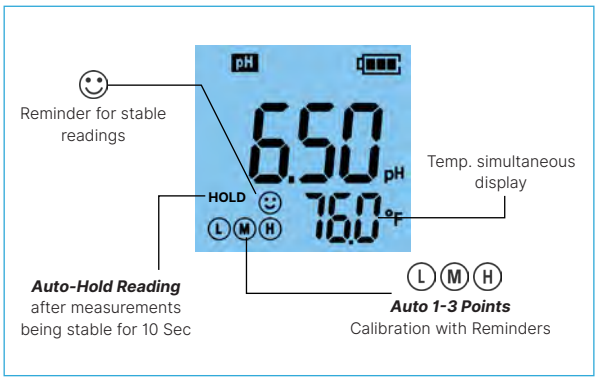
Display Features

Measurement Mode

Calibration Mode



Reading Alarm Mode



Instrument's Functions

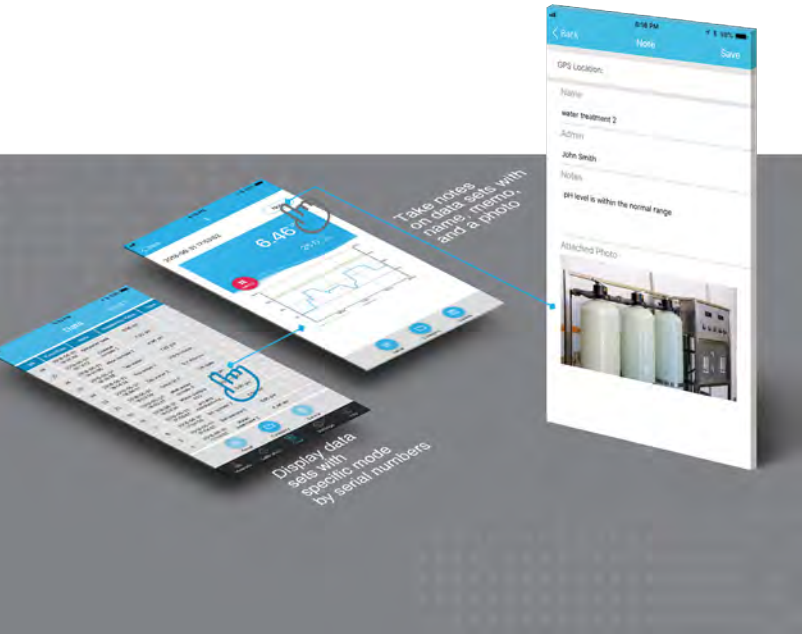
The probe is easy to replace, saving money in the long run

IP67 waterproof and dustproof

Easy calibration with the meter standing in the case

Powered by 4*AAA batteries, up to 1000 hours of battery life

Smart Controlling



- Two-way controlling – can be used as a conventional tester when a smart device is not available
- Smart operation reminders and self-diagnosis
- Electrode health condition reminder – helps you determine when to replace the electrode
- Instant data sharing on your smart device
- Organize datasets into different folders at ease
- Alarm function – notify you of any values exceeding your preset range
- Manual/Automatic Hold function
- Calibration reminder

Technical Specifications

	Model	PC60-Z	PH60-Z	PH60S-Z	PH60F-Z	EC60-Z	ORP60-Z	PCO60-Z
pH	Range	-2.00 to 16.00 pH				N/A		-2.00 to 16.00 pH
	Accuracy	±0.01 pH ±1 digit						±0.01 pH ±1 digit
	Calibration	1 to 3 points Auto. Calibration (recognizes 5 types of standards)						1 to 3 points Auto. Calibration (recognizes 5 types of standards)
mV (ORP)	Range	N/A				N/A	±1000 mV	±1000 mV
	Accuracy						±0.2% F.S	±0.2% F.S
Cond.	Range	0 to 20 mS/cm	N/A			0 to 20 mS/cm	N/A	0 to 20 mS/cm
	Accuracy	±1% F.S				±1% F.S		±1% F.S
	Calibration	1 to 3 points Auto. Calibration				1 to 3 points Auto. Calibration		1 to 3 points Auto. Calibration
TDS	Range	0 ppm to 10.0 ppt	N/A			0 ppm to 10.0 ppt	N/A	0 ppm to 10.0 ppt
	TDS conversion Factor	0.4 to 1.0				0.4 to 1.0		0.4 to 1.0
Salinity	Range	0 to 10.0 ppt				0 to 10.0 ppt		0 to 10.0 ppt
Resistivity	Range	50Ω·cm to 20MΩ·cm				50Ω to 20MΩ		50Ω·cm to 20MΩ·cm
Temp.	Range	0 to 50°C (32 to 122°F)						
Others	Application	General water solutions		Solid food samples	Flat surface & small-volume liquid	General water solutions		
	Temp. Compensation	Automatic 0 to 50°C (32 to 122°F)					N/A	Automatic 0 to 50°C (32 to 122°F)
	IP Rating	IP67 Waterproof and Dustproof						
	Power Supply	DC3V AAA batteries x4 (up to 1000 hours of operation)						
	Compatible Probes	PC60-DE, PH60-DE, PH60S-DE, PH60F-DE, ORP60-DA	PH60-DE, PH60S-DE, PH60F-DE, ORP60-DA			EC60-DE	ORP60-DE	PH60-DE, PH60S-DE, PH60F-DE, ORP60-DA
	Alarm Function	Yes (customizable on ZenTest App)						
	Automatic Hold	Yes (5 to 20 seconds, customizable on ZenTest App)						
	Calibration Reminder	Yes (by hours/days, customizable on ZenTest App)					N/A	Yes (by hours/days, customizable on ZenTest App)
ZenTest APP	Four display modes	Yes						
	Cloud data management	Yes						
	Smart self-diagnosis	Yes						
	Step-by-step calibration guide	Yes						

ZenTest® Smart LabSen pH Testers

ZENTEST™

Download on the App Store

android

Measuring with

LabSen®

Professional pH Electrode

Complete Test Kit

Tailored Precision

Portability

Smart Data Management

Find the right model for your specific application

PH60Z-WW
for wastewater, emulsions, suspensions & other dirty liquids

pH Electrode Model: **LabSen 335**
- Polymer electrolyte
- Anti-clogging open junction
- Long-life reference system
- Built-in temp. sensor for ATC

PH60Z-HF
for strong acidic and/or hydrofluoride-containing solutions (up to 2000 ppm)

pH Electrode Model: **LabSen 835**
- HF membrane minimizes acidic error
- Ceramic junction
- Sliver ion trap reference system
- Built-in temp. sensor for ATC

PH60Z-PW
for pure water e.g. drinking/ RO/distilled/well water

pH Electrode Model: **LabSen 805**
- L-membrane specialized for pure water measurement
- Triple ceramic junctions
- Sliver ion trap reference system
- Built-in temp. sensor for ATC

PH60Z-HT
for high temerature and/or Caustic Solutions

pH Electrode Model: **LabSen 865**
- Most robust PHY membrane
- Multi-pore PTFE junction
- Sliver ion trap reference system
- Built-in temp. sensor for ATC

PH60Z-MS
for small-volume liquid samples minimum sample volume: 60µL

pH Electrode Model: **LabSen 246-5**
- 6mm slim sensor
- Ceramic junction
- Long-life reference system
- Built-in temp. sensor for ATC

PH60Z-VS
for viscous samples e.g. cosmetics, coatings, glue, syrups, etc.

pH Electrode Model: **LabSen 855**
- Pre-pressurized reference system
- Blue gel electrolyte
- Ceramic junction
- Built-in temp. sensor for ATC

PH60Z-SA
for strong alkaline and/or high-salinity solutions

pH Electrode Model: **LabSen 845**
- HA membrane minimizes alkaline error
- Ceramic junction
- Sliver ion trap reference system
- Built-in temp. sensor for ATC

PH60Z-MT
for raw or frozen meats

pH Electrode Model: **LabSen 765**
- Food-grade titanium blade for meats direct test
- Polymer electrolyte
- Open+Ceramic double junction
- Built-in temp. sensor for ATC

Premium Series | Pocket Testers

pH / ORP / Conductivity / TDS / Salinity

Durable design:
IP67 Waterproof & Dustproof

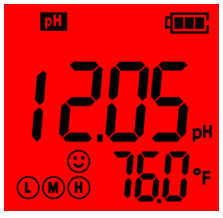
Easy-to-install
Replaceable Probes

Powered by AAA batteries,
up to 2000 hours of battery life

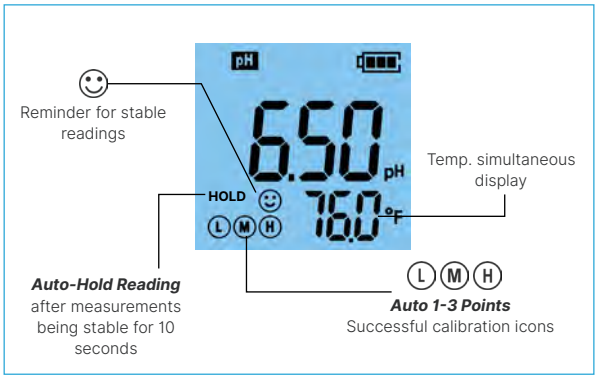
Display Features

Measurement Mode

Calibration Mode



Reading Alarm Mode



Different Probes for various applications

6 Models for your choice

PH60-E (Glass Bulb)
general water solutions pH test

PH60F-E (Flat)
surface and small-volume pH test

PH60S-E (Spear)
food samples pH test

ORP60-E (ORP)
ORP Test

EC60-E
(Platinum Black)
Conductivity/TDS/Salintiy Test

PC60-E (Combo)
pH/Cond./TDS/Salintiy Test

Applications

Test anywhere

Small-Volume pH Test

Skin pH Test

Food pH Test

Premium Series | Pocket Testers

	Model	PH60	PH60F	PH60S
pH	Measuring Range	-2.00 to 16.00 pH		
	Resolution/Accuracy	0.01 pH / ±0.01 pH±1 digit		
	Calibration	1 to 3 point Auto Calibration		
mV	Measuring Range	±1000 mV		
	Resolution/Accuracy	1 mV / ±0.2% F.S		
Temp.	Measuring Range	0 to 50.0 °C (32 to 122°F)		
Others	Temp. Compensation	Automatic 0 to 50.0 °C (32 to 122°F)		
	Reading Alarm Function	Yes		
	Self-Diagnosis	Yes		
	Low-Battery Warning	Yes		
	IP Rating	IP67 Waterproof and Dustproof		
	Power Supply	AAA Alkaline batteries x4; up to 2000 hours of battery life		
	Default Probe	PH60-E	PH60F-E	PH60S-E
	Application	General water solution's pH	Flat surface pH (textiles, skin, paper) and small-volume liquid's pH	Solid/Semi-Solid food samples (cheese, meat, fruit, sushi rice, dough, sauce, butter...)
	Compatible Probes	PH60-E, PH60F-E, PH60S-E, ORP60-E		

PH60 COMPLETE TEST KIT



	Model	PC60	EC60	ORP60
pH	Range	-2.00 to 16.00 pH	/	/
	Resolution/Accuracy	0.01 pH / ±0.01 pH±1 digit	/	/
	Calibration	1 to 3 Points Auto Calibration	/	/
mV	Range	/	/	±1000 mV
	Resolution/Accuracy	/	/	1 mV / ±0.2% F.S
Cond.	Range	0 µS/cm to 20.00 mS/cm	0 µS/cm to 20.00 mS/cm	/
	Resolution/Accuracy	0.1/1 µS, 0.01 mS / ±1% F.S	0.1/1 µS, 0.01 mS / ±1% F.S	/
	Calibration	1 to 3 Points Auto Calibration	1 to 3 Points Auto Calibration	1 Point Manual Calibration
	Temp. Coefficient	0.00 to 4.00%/°C	0.00 to 4.00%/°C	/
TDS	Range	0.0 ppm to 10.00 ppt	0.0 ppm to 10.00 ppt	/
	TDS Conversion Factor	0.4 to 1.0	0.4 to 1.0	/
Salinity	Range	0 to 10.00 ppt	0 to 10.00 ppt	/
Temp.	Range	0 to 50.0 °C (32 to 122°F)		
Others	Temp. Compensation	Yes		No
	Reading Alarm Function	No	No	Yes
	Self-Diagnosis	Yes		
	Low-Battery Alarm	Yes		
	IP Rating	IP67 Waterproof and Dustproof		
	Power Supply	AAA alkaline batteries x4; battery life up to 1000 hours		AAA alkaline batteries x4; battery life up to 2000 hours
	Default Probe	PC60-E	EC60-E	ORP60-E
	Compatible Probes	PH60-E, PH60F-E, PH60S-E, PC60-E, EC60-E	EC60-E	ORP60-E

Premium Series | LabSen® pH Testers

Measuring with

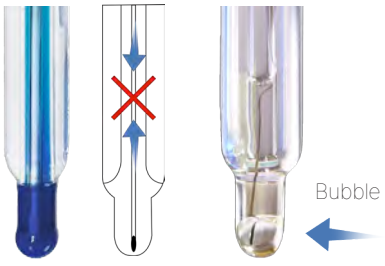
LabSen®

Professional pH Electrode

Complete Test Kit

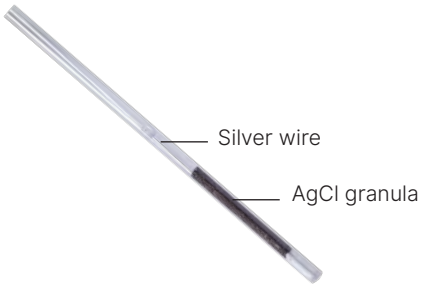
10 Times

Stronger than conventional electrodes



No Bubble

LabSen's unique blue gel inner solution does not flow at all, meaning it will never generate air bubbles.



Long-life reference system

- Improves reference stability
- Signifcantly extends service life

Find the right model for your specific application

PH60-WW
for wastewater, emulsions, suspensions & other dirty solutions

pH Electrode Model: **LabSen 335**
- Polymer electrolyte
- Anti-clogging open junction
- Long-life reference system
- Built-in temp. sensor for ATC

PH60-HF
for strong acidic and/or hydrofluoride-containing solutions (up to 2000 ppm)

pH Electrode Model: **LabSen 835**
- HF membrane minimizes acidic error
- Ceramic junction
- Sliver ion trap reference system
- Built-in temp. sensor for ATC

PH60-PW
for pure water e.g. drinking/ RO/distilled/well water

pH Electrode Model: **LabSen 805**
- L-membrane specialized for pure water measurement
- Triple ceramic junctions
- Sliver ion trap reference system
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PH60-HT
for high-temerature and/or caustic solutions

pH Electrode Model: **LabSen 865**
- Most robust PHY membrane
- Multi-pore PTFE junction
- Sliver ion trap reference system
- Built-in temp. sensor for ATC

PH60-MS
for small-volume liquid samples minimum sample volume: 60μL

pH Electrode Model: **LabSen 246-5**
- 6mm slim sensor
- Ceramic junction
- Long-life reference system
- Built-in temp. sensor for ATC

PH60-VS
for viscous samples e.g. cosmetics, coatings, glue, syrups, etc.

pH Electrode Model: **LabSen 855**
- Pre-pressurized reference system
- Blue gel electrolyte
- Ceramic junction
- Built-in temp. sensor for ATC

PH60-SA
for strong alkaline and/or high-salinity solutions

pH Electrode Model: **LabSen 845**
- HA membrane minimizes alkaline error
- Ceramic junction
- Sliver ion trap reference system
- Built-in temp. sensor for ATC

PH60-MT
for raw or frozen meats

pH Electrode Model: **LabSen 765**
- Food-grade titanium blade for meats direct test
- Polymer electrolyte
- Open+Ceramic double junction
- Built-in temp. sensor for ATC

Value Series | Pocket Testers




Model	PH20	EC20	TDS20	Salt20
Measuring Parameter	pH /°C	Conductivity (EC)/°C	TDS /°C	Salinity /°C
Range	0 to 14.0 pH 0 to 50°C (32 to 122°F)	0 µS/cm to 20.00 mS/cm 0 to 50°C (32 to 122°F)	0 ppm to 10.00 ppt 0 to 50°C (32 to 122°F)	0 to 10.00 ppt 0 to 50°C (32 to 122°F)
Resolution	0.1 pH; 0.1°C/°F	0.1/1 µS; 0.01 mS; 0.1°C/°F	0.1/1 ppm; 0.01 ppt; 0.1°C/°F	0.01 ppt; 0.1°C/°F
Accuracy	±0.1 pH; ±0.5°C/±1°F	±1% F.S; ±0.5°C/±1°F	±1% F.S; ±0.5°C/±1°F	±1% F.S; ±0.5°C/±1°F
Temperature Compensation	Automatic 0 to 50°C	Automatic 0 to 50°C	Automatic 0 to 50°C	Automatic 0 to 50°C
Calibration Points	1 to 3 Points	1 to 2 Points	1 to 2 Points	1 Point
Self-Diagnosis	Yes	Yes	Yes	Yes
Low Battery Warning	Yes	Yes	Yes	Yes
Battery Life	up to 2000 hours	up to 1000 hours	up to 1000 hours	up to 1000 hours
IR Rating	IP67 waterproof and dustproof			
Power Supply	AAA batteries ×4			
Dimension Weight	Tester : 40x31x178mm/107g Case: 190x165x40mm /438g			

- Large clear LCD with display of measurement and temperature reading
- Stable reading indication with a smiley face
- Self-diagnosis to ensure correct calibration
- Powered by 4*AAA batteries, up to 2000 hours of battery life
- Complete test kit with ready-to-use buffers in a rugged carrying case


Aquaculture


Swimming pool


Hydroponics


IP67 Waterproof

Complete Test Kit

PH20

PH20 meter / 1×50ml pH7.00 and pH4.00 buffer solution / 4×AAA batteries / lanyard / carrying case

EC20

EC20 meter / 1×50ml 1413μS and 12.88mS cailbration solution / 4×AAA batteries / lanyard / carrying case

TDS20

TDS20 meter / 1×50ml 1413μS and 12.88mS cailbration solution / 4×AAA batteries / lanyard / carrying case

Salt20

Salt20 meter / 1×12.88mS cailbration solution / 4×AAA batteries / lanyard /carrying case

GroStar® Pen Testers

GS1 pH Pen

GS3 EC/ppm Pen

GS4 pH/EC/ppm Pen

GS2 Soil pH Pen

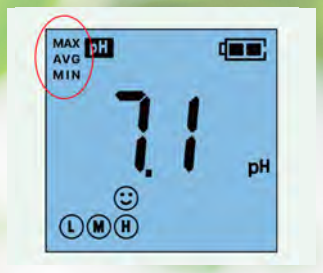
Accurate

Durable

Easy to use

Double-junction pH probe for greater durability in complex nutrient solution testing

EC sensor made with titanium alloy ensures high accuracy and takes minimal maintenance.



TruRead Measurement Mode for easy soil data logging from multiple locations

ORP probe can be installed to measure ORP, which tells the ability of nutrient solutions to break down waste and contaminant.

Technical Specifications

Model	GS1 pH Pen Tester	GS1-P pH Pen Tester + ORP Probe	GS2 Soil pH Pen Tester	GS3 EC Pen Tester	GS4 pH/EC Combo Pen Tester	GS4-P pH/EC Combo Pen Tester + ORP Probe
Range	0.0 to 14.0 pH; 0 to 50˚C (32 to 122˚F)	0.0 to 14.0 pH; -1000 to 1000 mV; 0 to 50˚C (32 to 122˚F)	0.0 to 14.0 pH; 0 to 50˚C (32 to 122˚F)	0 to 10.0 EC; 0 to 7000ppm (700ppm); 0 to 5000ppm(500ppm); 0 to 50˚C (32 to 122˚F)	0.0 to 14.0 pH; 0 to 10.0 EC; 0 to 7000ppm (700ppm); 0 to 5000ppm (500ppm); 32 to 122˚F (0 to 50˚C)	0.0 to 14.0 pH; 0 to 10.0 EC; 0 to 7000ppm (700ppm); 0 to 5000ppm (500ppm); -1000 to 1000 mV; 32 to 122˚F (0 to 50˚C)
Resolution	0.1 pH, 0.1˚F/0.1˚C	0.1 pH, 1 mV, 0.1˚F/0.1˚C	0.1 pH, 0.1˚F/0.1˚C	0.1EC, 10ppm (700ppm), 10ppm(500ppm), 0.1˚F/0.1˚C	0.1 pH; 0.1 EC; 10ppm (700ppm); 10ppm(500ppm); 0.1˚F/0.1˚C	0.1 pH; 0.1 EC; 10ppm (700ppm); 10ppm(500ppm); 1 mV; 0.1˚F/0.1˚C
Accuracy	±0.1 pH; ±1˚C/±1˚F	±0.1 pH; ±2mV; ±1˚C/±1˚F	±0.1 pH; ±1˚C/±1˚F	±0.1 EC; ±30ppm (500ppm); ±40ppm (700ppm) ±1˚C/±1˚F	±0.1 pH;±0.1 EC; ±30ppm (500ppm); ±40ppm (700ppm); ±1˚C/±1˚F	±0.1 pH;±0.1 EC; ±30ppm (500ppm); ±40ppm (700ppm); ±2mV; ±1˚C/±1˚F
Temp. Compensation	Automatic 32 to 122˚F (0 to 50˚C)					
Calibration	Automatic 1 to 3 points(7/4/10) (*pH 10 solution sold separately)			Automatic 1 point (2.77 EC)	pH: Automatic 1 to 3 points (7/4/10) (*pH 10 solution sold separately); EC: Automatic 1 point (2.77 EC)	
Unit	pH, ˚F, ˚C	pH, mV, ˚F, ˚C	pH, ˚F, ˚C	EC, 500ppm, 700ppm, F, ˚C	pH, EC, 500ppm, 700ppm, ˚F, ˚C	pH, EC, 500ppm, 700ppm, mV, ˚F, ˚C
Power supply	4*AAA alkaline batteries					
Backlight	White (measurement); Green (calibration); Red (error)					
Reading Hold	Manual					
pH Probe	Low impedance lithium glass membrane, double junction, blue gel electrolyte		LabSen® Soil Spear Probe	N/A	Low impedance lithium glass membrane, double-junction, blue gel electrolyte	
EC Probe	N/A			Titanium alloy	Titanium alloy	
ORP Probe	N/A	Platinum needle; Double junction	N/A	N/A	N/A	Platinum needle; Double junction
Wateproof Rating	IP67					
What's Included	GS1 pH Pen Tester, pH calibration buffer solution 7.00 & 4.00 (50ml each), 3M KCL soaking solution (10ml), user manual, lanyard	GS1 pH Pen Tester, GS5-E ORP Probe, pH calibration buffer solution 7.00 & 4.00 (50ml each), 3M KCL soaking solution (10ml), user manual, lanyard	GS2 Soil pH Pen Tester, pH calibration buffer solution 7.00 & 4.00 (50ml each) , 3M KCL soaking solution (10ml), dibber, cleaning brush, user manual, lanyard	GS3 EC Pen Tester, 2.77 EC calibration solution (50mL), user manual, lanyard	GS4 pH EC Combo Pen Tester, pH calibration buffer solution 7.00 & 4.00 (50ml each), 3M KCL soaking solution (10ml), 2.77 EC calibration standard solution (50mL), user manual, lanyard	GS4 pH EC Combo Pen Tester, GS5-E ORP Probe, pH calibration buffer solution 7.00 & 4.00 (50ml each), 3M KCL soaking solution (10ml), 2.77 EC calibration standard solution (50mL), user manual, lanyard
Dimension	Tester : 40x31x178mm/107g Case: 190x165x40mm /438g					

850 Value Series Portable Meters

- PH850 pH Meter
- EC850 Conductivity Meter
- PC850 pH/Conductivity Meter

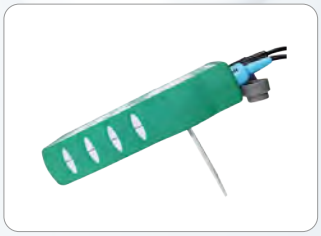
Main Features

- Quick and easy 1- to 3-point auto. calibration
- Slope data display between calibrations reminds of the pH electrode condition
- Simultaneous measurement of pH and conductivity/TDS
- Complete settings for standard series, resolution, stability criteria, conductivity cell constant, TDS conversion factor, and more

Rubber boot protection

Rubber caps protecting the connectors

With calibration guide and self diagnosis function



foldable holder;
Use as a benchtop meter.

IP57 waterproof rating

Ergonomic design

Operation guide on the back

PH850 Portable pH Meters for Specialized Applications

Portable pH meters for special applications

PH850-DP pH Meter (Liquid Food pH test)

Electrode: LabSen 823 ATC pH electrode
Electrode Feature: Protelyte electrolyte and silver-ion-trap reference prevents junction clogs in protein-containing samples.
Application: liquid food e.g. milk, yogurt, cream, sauce, jam, etc.

PH850-FT pH Meter (Flat Surface Test)

Electrode: : LabSen 373 ATC Flat pH electrode
Electrode Feature: Flat glass membrane, suitable for flat surface pH measurement.
Application: skin, textiles, paper, and small-volume samples etc.

PH850-MS pH Meter (Micro volume measurement)

Electrode: LabSen 242-6 ATC pH electrode
Electrode Feature: dimension of the sensor is Φ6×100mm, fast-response S membrane
Application: measurement for small volume samples (minimum volume: 60μL) and in test tubes.

PH850-MT pH Meter (Meat pH test)

Electrode: LabSen 763 ATC Spear pH electrode
Electrode Feature: food grade titanium sheath and blade, polymer electrolyte.
Application: fresh meat, frozen meat, and meat products.

PH850-PW pH Meter (Purified water pH test)

Electrode: LabSen 803 ATC pH electrode
Electrode Feature: movable sleeve junction, and L-type membrane designed for pure water and low ion concentration water solutions.
Application: drinking/distilled/RO/deionized/ boiler/storm/surface water

PH850-WW pH Meter (Waste water pH test)

Electrode: LabSen333 ATC pH electrode
Electrode Feature: Open junction+polymer electrolyte, high-resistance for contamination
Application: wastewater, suspensions, suspensions, slurries, and other dirty liquids.

PH850-SS pH Meter (Soft-Solid Food pH test)

Electrode: LabSen 753 ATC Spear pH electrode
Electrode Feature: food-grade titanium sheath, open junction for soft-solid food samples.
Application: cheese, dough, fruit, sushi rice, etc.

PH850-SL pH Meter (Soil pH test)

Electrode: LabSen 553 ATC Spear pH electrode
Electrode Feature: PVC housing, spear sensor for direct soil test.
Application: soil (direct test, no slurry needed).

PH850-SA pH Meter (Strong Alkalis solutions pH test)

Electrode: LabSen 843 ATC pH Electrode
Electrode Feature: HA Glass Membrane
Application: High-Precision pH measurement in strong alkaline solutions (12-14 pH) and high-salinity solutions (>5000ppm/0.5%)

PH850-HT pH Meter (High-Temp Liquid and Caustic Solutions)

Electrode: LabSen 863 ATC pH Electrode
Electrode Feature: Special PHY membrane and PTFE junction
Application: High-accuracy pH measurement of corrosive and high-temp. solutions such as electroplating solutions.

PH850-HF pH Meter (Strong Acid solutions pH test)

Electrode: LabSen 833 ATC pH Electrode
Electrode Feature: Special HF glass membrane
Application: solutions containing Hydro fluoride acid or other strong acids.

PH850-BR pH Meter (Beverage Making)

Electrode: LabSen 213 ATC pH electrode
Electrode Feature: LabSen S type hemispherical glass membrane, fast response and high robustness
Application: Beverage making (beer, wine, juice, kombucha, etc.)



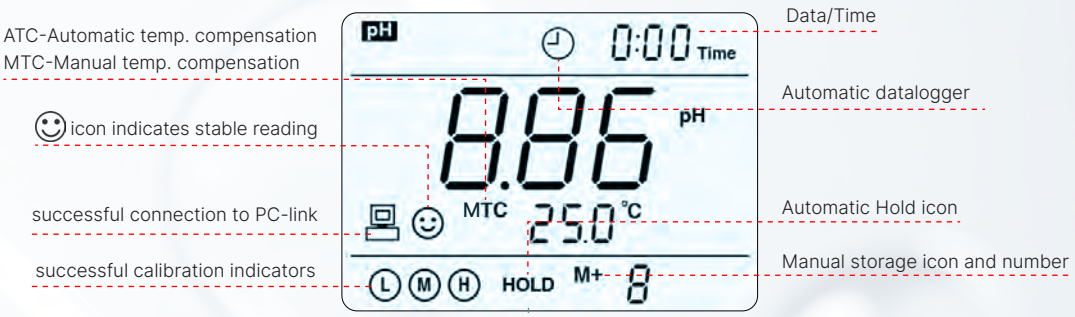
	Model	PH850	PC850	EC850
Parameter		pH/mV/Temp.	pH/mV/Cond./TDS/Temp.	Cond./TDS/Temp.
pH	Range	0 to 14.00 pH		/
	Resolution	0.1/0.01 pH		/
	Accuracy	±0.01 pH±1 digit		/
	Temp. Compensation	0 to 100°C(32 to 212°F), automatic or manual		/
	Automatic calibration	1 to 3 points		/
	Buffer standard	USA/NIST		/
	Stability setting	Yes		/
mV	Range	±1000 mV		/
	Resolution	1 mV		/
	Accuracy	±0.2% FS ±1 digit		/
Cond.	Range	/	0 to 200.0 mS/cm	
	Resolution	/	0.01/0.1/1 µS, 0.01/0.1 mS	
	Accuracy	/	±1%F.S±1 digit	
	Electrode constant	/	0.1/1.0/10.0 cm^{-1}	
	Temp. compensation	/	0 to 50°C (32 to122°F) auto. or manual	
	Reference temperature	/	15 to 30°C	
	Temp. compensation coefficient	/	0 to 9.99%/°C	
	Calibration	/	1 to 3 points automatic	
TDS	Range	/	0.1 ppm to 100 ppt	
	TDS coefficient	/	0.40 to 1.00	
Temp.	Range	0 to 100°C (32 to 212°F)		
	Resolution	0.1°C, 0.1/1°F		
	Accuracy	±0.5°C±1 digit, ±1.0°F±1 digit		
Function	Display	LCD		
	Stable reading indicator	with ☺ icon		
	Automatic hold	Yes		
	Date and time	N/A		
	Data storage	N/A		
	Auto. timing datalogger	N/A		
	Self-diagnosis	Yes		
	USB output	N/A		
	Electrode connection	pH: BNC; Conductivity: 4 pin connector; Temp: RCA		
	IP rating	IP57 waterproof		
Others	Power	AA alkaline battery (1.5V×3)		
	Dimension/weight meter only	88×170×33mm/313g		
	Dimension/weight kit	360×270×76mm/1.3kg		

8500 Premium Series Portable Meters

- **PH8500 pH Meter**
- **EC8500 Conductivity Meter**
- **PC8500 pH/Conductivity Meter**

Main Features

- Simultaneous measurement of pH and conductivity/TDS/Salinity/Resistivity.
- Quick and easy 1- to 3-point auto. calibration with slope data display and self-diagnosis
- Manual/Auto. GLP data logger with USB data output



Large LCD screen with white backlight.

IP57 waterproof rating

Combo electrodes for multi-parameter test

USB port for data/power

PC link software for data analysis

Use with foldable stand

PH8500 Portable pH Meters for Specialized Applications

PH8500-DP pH Meter (Liquid Food pH test)

Electrode: LabSen 823 ATC pH electrode
Electrode Feature: Protelyte electrolyte and silver-ion-trap reference prevents junction clogs in protein-containing samples.
Application: liquid food e.g. milk, yogurt, cream, sauce, jam, etc.

PH8500-FT pH Meter (Flat Surface Test)

Electrode: : LabSen 373 ATC Flat pH electrode
Electrode Feature: Flat glass membrane, suitable for flat surface pH measurement.
Application: skin, textiles, paper, and small-volume samples etc.

PH8500-MS pH Meter (Small-volume pH test)

Electrode: LabSen 242-6 ATC pH electrode
Electrode Feature: dimension of the sensor is Φ6×100mm, fast-response S membrane
Application: measurement for small volume samples (minimum volume: 60μL) and in test tubes.

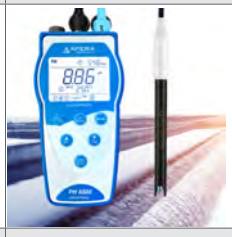
PH8500-MT pH Meter (Meat pH test)

Electrode: LabSen 763 ATC Spear pH electrode
Electrode Feature: food grade titanium sheath and blade, polymer electrolyte.
Application: fresh meat, frozen meat, and meat products.

PH8500-PW pH Meter (Purified water pH test)

Electrode: LabSen 803 ATC pH electrode
Electrode Feature: movable sleeve junction, and L-type membrane designed for pure water and low ion concentration water solutions.
Application: drinking/distilled/RO/deionized/boiler/storm/surface water

PH8500-WW pH Meter (Dirty Liquid pH test)



Electrode: LabSen333 ATC pH electrode
Electrode Feature: Open junction+polymer electrolyte, high-resistance for contamination
Application: wastewater, suspensions, suspensions, slurries, and other dirty liquids.

PH8500-SS pH Meter (Solid Food pH test)

Electrode: LabSen 753 ATC Spear pH electrode
Electrode Feature: food-grade stainless steel sheath, open junction for soft-solid food samples.
Application: cheese, dough, fruit, sushi rice, etc.

PH8500-SL pH Meter (Soil pH test)

Electrode: LabSen553 ATC Spear pH electrode
Electrode Feature: PVC housing, spear sensor for direct soil test.
Application: soil (direct test, no slurry needed).

PH8500-SA pH Meter (Strong Alkalis solutions pH test)

Electrode: LabSen 843 ATC pH Electrode
Electrode Feature: HA Glass Membrane
Application: High-Precision pH measurement in strong alkaline solutions (12-14 pH) and high-salinity solutions (>5000ppm/0.5%)

PH8500-HT pH Meter (High-Temp Liquid and Caustic Solutions)

Electrode: LabSen 863 ATC pH Electrode
Electrode Feature: Special PHY membrane and PTFE junction
Application: High-accuracy pH measurement of corrosive and high-temp. solutions such as electroplating solutions.

PH8500-HF pH Meter (Strong Acid solutions pH test)

Electrode: LabSen 833 ATC pH Electrode
Electrode Feature: Special HF glass membrane
Application: solutions containing Hydro fluoride acid or other strong acids.

PH8500-BR pH Meter (Beverage Making)

Electrode: LabSen 213 ATC pH electrode
Electrode Feature: LabSen S type hemispherical glass membrane, fast response and high robustness
Application: Beverage making (beer, wine, juice, kombucha, etc.)



	Model	PH8500	PC8500	EC8500
Parameter		pH/mV/Temp.	pH/mV/Cond./TDS/Sal/Temp.	Cond./TDS/Sal/Temp.
pH	Range	-2.00 to 16.00 pH		/
	Resolution	0.1/0.01 pH		/
	Accuracy	±0.01 pH±1 digit		/
	Temp. Compensation	0 to 100°C (32 to212°F), automatic or manual		/
	Automatic calibration	1 to 3 points		/
	Buffer standard series	USA/NIST/Customized		/
	Calibration reminder	Yes		/
	Calibration date checking	Yes		/
	Stability criterion setting	Yes		/
mV	Range	-1999 mV to 1999 mV		/
	Resolution	±0.1/1 mV		/
	Accuracy	±0.1% F.S		/
Cond.	Range	/	0 to 200.0 mS/cm	
	Resolution	/	0.01/0.1/1 µS, 0.01/0.1 mS	
	Accuracy	/	±1%F.S	
	Electrode constant	/	0.1/1.0/10.0 cm^{-1}	
	Auto temp. compensation	/	0 to 50°C (32 to122°F)	
	Reference temperature	/	15 to 30°C	
	Temp. compensation coefficient	/	0 to 9.99%/°C	
	Calibration	/	1 to 3 points automatic	
	Calibration standard series	/	Standard/Customized	
	Calibration reminder	/	Yes	
	Calibration date checking	/	Yes	
TDS	Range	/	0 ppm to 100 ppt	
	TDS conversion factor	/	0.40 to 1.00	
Salinity	Range	/	0 to 100 ppt	
Temp.	Range	0 to 100°C (32.0 to 212°F)		
	Resolution	0.1°C, 0.1/1°F		
	Accuracy	±0.5°C, ±1.0°F		
Function	Display	LCD (white backlight)		
	Stable reading indicator	with ☺ icon		
	Automatic hold	Yes		
	Date and time	Yes		
	Data storage	500 sets		
	Auto. timing data logger	Yes		
	Self-diagnosis information	Yes		
	USB output	Yes		
	Electrode Connection	pH: BNC; Conductivity: 4 pin connector; Temp: RCA		
	IP Rating	IP57 waterproof		
Others	Power	AA battery (1.5V×3) / USB		
	Dimension/weight meter only	88×170×33mm/313g		
	Dimension/weight with case	360×270×76mm/1.3kg		

Portable Optical Dissolved Oxygen Meters

Main Features

- Cutting-edge Optical DO sensor accurately measures dissolved oxygen in an effortless manner
- Quick and easy calibration for saturated oxygen and zero oxygen
- Large backlit LCD screen, simultaneously displaying DO and temperature.
- Complete test kit in a rugged carrying case

Conventional DO vs. Optical DO		
	Polarographic or galvanic DO sensor	Optical DO sensor
Measurement	Consume oxygen during test — unstable readings. Users have to stir probes at a certain speed to get stable readings.	Adopts luminescent technologies. No oxygen being consumed during test — readings get stabilized quickly.
Calibration	Serious polarization problem will occur, requiring frequent calibration	No polarization. No need to calibrate frequently.
Performance	Slower response, poorer repeatability	Fast response, better repeatability
Maintenance	Need to replace membrane, replenish electrolytes, and clean cathodes and anodes	No electrolytes to replenish; No cathodes and anodes to clean.
Lifetime	Short service life. Need to replace the membrane frequently.	8000 hours of service life for the replaceable membrane cap

Intelligent Functions

- Auto. Temperature Compensation; Auto. Barometric Compensation
- Auto. Salinity Compensation (DO8500 only)
- Manual/Auto. GLP data logger with 500 sets of data storage (DO8500 only)
- Data export via USB to PC-link software (DO8500 only)
- Fully customizable settings for DO unit, resolution, auto. reading lock, salinity compensation, barometric pressure calibration, and more

Technical Specifications

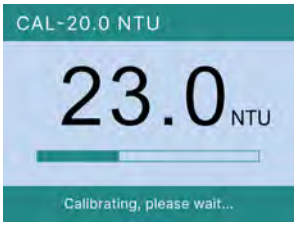
	Model	DO850	DO8500
Parameter		DO/temp.	DO/Salinity/temp.
Dissolved Oxygen	Range	(0 to 20.00) ppm (mg/L); (0 to 200.0) %	
	Resolution	0.01/0.1mg/L (ppm); 0.1/1%	
	Accuracy	±2% reading or ±2% saturation, whichever is greater; ±2% reading or ±0.2 mg/L, whichever is greater	
	Response time	≤30s (25°C, 90% response)	
	Calibration point	Saturated oxygen & zero oxygen	
	Temperature compensation	Automatic, (0 to 50.0) °C	
	Pressure compensation	Automatic, (60 to 120) kPa	
	Salinity Compensation	Manual, (60 to 120) kPa	Automatic or manual, (60 to 120) kPa
Temperature	Range	(0 to 50.0) °C	
	Resolution	0.1 °C	
	Accuracy	±0.5°C	
Instrument Functions	Display	LCD (white backlight)	
	Stable reading indication	☺ icon	
	Automatic hold	Yes	Yes
	Date and time	/	Yes
	Data Storage	/	500 sets
	Auto. timing data logger	/	Yes
	USB data output	/	Yes
	IP rating	IP57 waterproof	
Others	Power	AA battery x3 (1.5V×3)	
	Dimension/weight only meter	88×170×33mm/313g	
	Dimension/weight for kit	360×270×76mm/1.5kg	360×270×76mm/1.6kg
	What's included	DO850 meter DO803 DO probe (3M cable) Calibration sleeve+carrying case	DO8500 meter DO803 DO probe(3M cable) 2301-3M salinity electrode Calibration sleeve+carrying case Combination probe clip, USB cable+software flashdrive

Portable Turbidity Meter

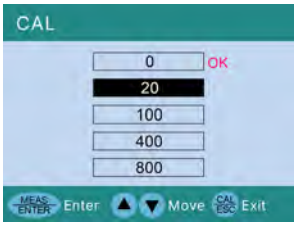
	EPA 180.1 Compliant	*ISO 7027 Compliant*
Advanced	TN500	TN480
Basic	TN420	TN400

Intuitive User Interface

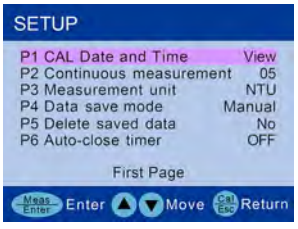
Measurement mode



Calibration mode



Calibration setup



Settings

Customized AMCO® Polymer Standard Calibration Solutions

Approved by U.S EPA and ASTM, AMCO® high-molecular polymer turbidity standard solutions are the best alternatives to Formazin standards in terms of shelf-life, ease of use, and safety concerns.

	AMCO® polymer solutions	Formazin solutions
Toxicity	Non-toxic	Highly toxic, PPE is necessary when handling
Operation	No diluting needed, use directly 	Requires diluting, complicated operation
Shelf life	1 year	<2 NTU: 1 hour; 2 – 20 NTU: 12 – 24 hours; 20 – 400 NTU: 1 month
Storage condition	Avoid sunlight at room temp.	Avoid sunlight at low temperature
Convenience	Very stable, can be used directly	Easy to settle, requires flipping and mixing
Traceability	NIST traceable	Non-traceable

TN500 Premium Portable Turbidity Meter – Compliant with EPA 180.1

- Replaceable lab-grade Tungsten filament lamp
- Ideal for high-accuracy low-turbidity measurement (<10 NTU)
- Range: 0 – 1000 NTU, auto. ranging

Place the sample vial

Replaceable light source

GLP data management & USB data export

Rechargeable lithium battery

Portable Turbidity Meter

TN480 and TN400 Turbidity Meter — Compliant with ISO 7027

- Infrared LED light source, compliant with ISO7027 and DIN EN 27027 Method
- Suitable for sample solutions with color such as wine and beer
- Range: 0 – 1000 NTU, auto. ranging
- TruRead mode (TN480 and TN500 only) compensates errors for samples with rapid settlement

Complete Kit

Model	Name	Description	Memo
TN500	Portable Turbidimeter kit	Refer to technical specs	EPA • Advanced
TN420			EPA • Basic
TN480			ISO • Advanced
TN400			ISO • Basic
T500-2	0 NTU standard	0.0NTU/100mL	applicable for all
T500-1	Standards kit	20/100/400/800NTU	TN500/TN420
T200-1	Standards kit	20/100/400/800NTU	TN480/TN400
T500-3	Sample Vials	φ25×60 mm, 6 pcs	applicable for all
TN500-5	Replacement lamp	/	TN500/TN420
TN500-4	Lithium battery	3.7V rechargeable	TN500/TN420
TN400-S3	Silicone oil	10ml	applicable for all

Model	TN500 Premium	TN420 Basic	TN480 Premium	TN400 Basic
Light Source	Tungsten filament lamp, 400 – 600 nm		Infrared LED, 860±30 nm	
Regulatory	Compliant with U.S EPA 180.1 Method		Compliant with ISO7027 and DIN EN 27027 Method	
Certification	CE, RoHS			
Range	0 – 1000 NTU (FNU), auto. ranging			
Resolution	0.01 NTU (0 – 19.99) / 0.1 NTU (20.0 – 99.9) / 1 NTU (100 – 1000)			
Accuracy	± 2% of reading plus stray light			
Repeatability	±1% of reading or 0.02 NTU, whichever is greater			
Calibration Standards	T500-1 AMCO solution kit / Formazin standard solution 0/20/100/400/800 NTU		T200-1 AMCO solution kit / Formazin standard solution 0/20/100/400/800 NTU	
Detector	Silicon photovoltaic			
Measurement Mode	Normal (push to read); TruRead Mode	Normal (push to read); Average Mode	Normal (push to read); TruRead Mode	Normal (push to read); Average Mode
0 NTU error reminder	Yes	N/A	Yes	N/A
Data storage	200 sets	N/A	200 sets	N/A
Data export	USB to PC	N/A	USB to PC	N/A
Calibration record	Date and time	N/A	Date and time	N/A
System language	English, Spanish, Chinese, Japanese	English	English, Spanish, Chinese, Japanese	English
Screen	TFT Color Screen			
Sample vials	φ25×60 mm , 18 mL , high borosilicate glass with lid			
Power supply	3.7V rechargeable lithium battery		AA Alkaline battery *4	
Working condition	Temperature: 0 – 50°C; Humidity: 0 – 90%			
Storage condition	Instrument: -40 – 60°C ; Calibration solutions: 5 – 30°C			
Enclosure rating	IP67			
Warranty	2 years			
Dimension & Weight	Instrument: (90×203×80)mm / 385g; Kit: (310×295×110)mm / 1.5 kg			

SX700 Series Portable Meters

- SX716 DO Meter
- SX721 pH/ORP Meter
- SX723 pH/Conductivity Meter
- SX725 pH/DO Meter
- SX731 pH/ORP/Conductivity Meter
- SX736 pH/Conductivity/DO Meter
- SX751 pH/ORP/Conductivity/DO Meter

SX700 Series Multiparameter Handheld Meter Kit

pH | ORP | Conductivity | TDS | Salinity | Resistivity | DO | Temperature

IP57 waterproof

Waterproof 8-pin Connector

Conductivity/Resistivity Measurement of High Purity Water

Palarographic DO Probe with automatic compensation for temperature and salinity

	Model		716	721	723	725	731	736	751
Measurement parameters	pH/mV			√	√	√	√	√	√
	ORP (electrode included)			√			√		√
	Conductivity/TDS/Salinity/Resistivity				√		√	√	√
	Dissolved Oxygen		√			√		√	√
	Temperature		√	√	√	√	√	√	√
pH	Range	-2.00 to 19.99 pH		√	√	√	√	√	√
	Accuracy	±0.01pH±1 digit							
	Automatic calibration	1-3 point							
	Temp. compensation range	0 to 100°C							
mV	Measuring Range	-1999 to 1999 mV		√	√	√	√	√	√
	Accuracy	±0.1% F.S							
Conductivity	Range	Conductivity: (0.00 to 19.99) µS; (20.0 to 199.9) µS; (200 to 1999) µS; (2.00 to 19.99) mS; (20.0 to 199.9) mS; TDS: (0 to 100) g/L; Salinity: (0 to 100) ppt; Resistivity: (0 to 100) MΩ			√		√	√	√
	Accuracy	±1.0%FS							
	Automatic calibration	1 point							
	Temp. compensation range	(0 to 50) °C							
DO	Range	(0 to 20.00) mg/L(ppm) (0 to 199.9) %	√			√		√	√
	Accuracy	± 0.30 mg/L							
	Temp. compensation range	0 to 45°C (auto.)							
	Salinity compensation range	0 to 45 ppt (auto.)							
	Barometric pressure	(66 to 200) kPa (manual)							
Other	Data storage		100	200		300		400	
	Power		AA batteries (1.5V x2)						
	IP rating		IP57 Dustproof and waterproof						
Size and weight	Meter		(65x120x31) mm/180g						
	Small case (255x210x50)mm/790g		√						
	Big case (360x270x76) mm/ 1.7Kg			√	√	√	√	√	√
Basic configuration	201T-S ATC pH electrode			√	√	√	√	√	√
	301Pt-S ORP combination electrode			√			√		√
	2301T-S ATC conductivity electrode				√		√	√	√
	DO500 Polarographic DO electrode		√			√		√	√
	pH standard buffer solution (pH4.00, pH7.00 and pH10.01/50mL)			√	√	√	√	√	√
	222mV ORP standard buffer solution(50ml)			√					
	1413µS/cm conductivity standard solution (50mL)				√		√	√	√

400 Series Portable Meters

Accurate Measurement

- Fast-response ATC pH electrode and Ultra-firm Platinum Black conductivity electrode ensure high accuracy in wide measuring ranges
- Advanced digital filtering technology improves measurement precision
- Quick & Easy 3-point pH calibration and 4-point conductivity calibration

Intelligent Functions

- Self-Diagnosis helps you perform calibrations properly
- Slope display helps you determine the condition of your pH electrode.
- Fully configurable parameter settings (buffer standard series, electrode constant, reference temperature, temperature compensation coefficient, Temperature unit, etc.)

PC 400 kit

Reliable Structure

- IP57 Waterproof and Dustproof, ideal for use in harsh environments
- Large white backlit LCD display
- Complete test kit comes in a rugged test kit

Measuring Parameters	PH400	EC400	PC400
pH/mV	Yes	N/A	Yes
Conductivity/TDS	N/A	Yes	Yes

400S Series Portable Meter

400S Series

Everything in 400 & more

- Auto./manual GLP data logger
- 5-Point pH auto. calibration with calibration reminder and calibration record check
- USB Data output and power supply
- Auto./Manual data logger

Measuring Parameters	PH400S	EC400S	PC400S
pH/mV	Yes	N/A	Yes
Conductivity/TDS/Salinity/Resistivity	N/A	Yes	Yes

PC Connectivity

USB Data Output & Power Supply

PC 400S kit

Name	ATC pH Electrode
Model	201T-S
Measuring Range	0 to 14 pH/ 0 to 80°C
Junction	Ceramic
Reference Electrode	Ag/AgCl
Temperature Sensor	30K NTC Thermister
Connector	8-pin Connector
Features	Low impedance lithium membrane for fast response

Name	ATC Conductivity Electrode
Model	2301T-S
Measuring Range	0.5 µS/cm to 200 mS/cm
Electrode Constant	1.0 ±0.2 cm^{-1}
Sensor	Firm Platinum Black
Temperature Sensor	30K NTC Thermister
Connector	8-pin Connector
Features	Firm conductivity sensor ensures high accuracy in a wide range (0 to 200 mS/cm)

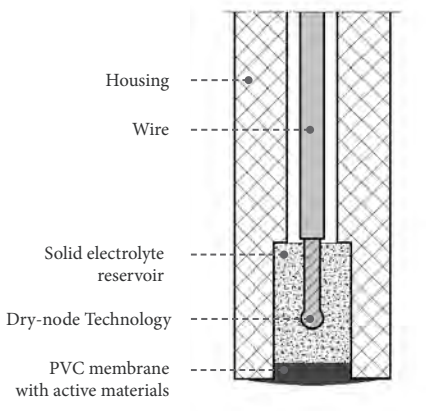
Portable Ion Meters

Main Features

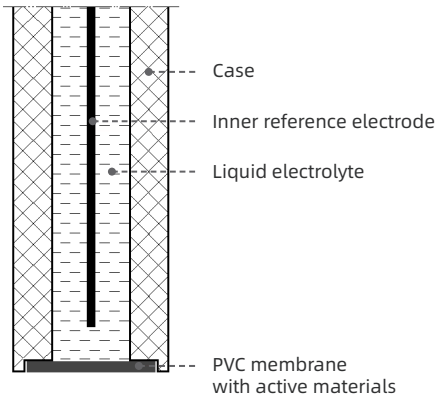
- Equipped with IndSen ion selective electrodes for both lab testing and in-line continuous monitoring with high-precision, fast response, and long-term stability
- Automatically recognizes which ion selective electrode is connected
- 15 types of existing ion measurement modes are built-in along with pH measurement mode and a user-defined ion mode
- 3-point manual calibration for ions and 3-point auto. calibration for pH
- Calibration data for each ion is memorized in the meter so redundant calibrations can be avoided when measuring with different ion selective electrodes
- Large backlit screen, 500-1000 sets of data storage (400S only), self-diagnosis, fully customizable parameter settings

IndSen Ion Selective Electrodes

IndSen **Ultra-firm** PVC membrane electrodes adopts innovative technologies, including the reservoir for solid electrolyte and ion active materials in a rugged structure. The service life of the Ultra-firm PVC membrane electrodes is **2-3 times** longer than that of conventional PVC membrane electrodes, and maintenance is also much easier.



Ultra-firm PVC membrane electrode



Conventional PVC membrane electrode

	Ultra-firm PVC membrane	Conventional PVC membrane
PVC membrane	About 1.2mm in thickness, no dent	0.3 – 0.8mm in thickness, surface of the membrane can be easily bulged or dented
Ionic active materials	A reservoir of active materials and electrolyte, greatly extending the service life of the electrode	Exists only in PVC membrane, active materials tend to be consumed quickly
Reference electrode	Solid electrolyte, no fluidity or volatilization, strengthening the membrane	Liquid electrolyte, volatile, weak membrane strength
Pre-conditioning	Soak for a few minutes	Soak for several hours
Service life	Shelf life is 12 months, and warranty period is 6 months	The shelf life is less than 6 months

Technical Specifications

Name	Ion	Electrode Membrane	Range			Temperature Range °C	pH Range pH
			pX	mol/L	mg/L (ppm)		
Sodium ion electrode	Na^+	Ultra-Firm PVC membrane	5 – 0 pNa	10^{-5} – 1	0.23-23000	5 – 50	3-10
Calcium ion electrode	Ca^{2+}		5.3 – 1 pCa	5×10^{-6} – 10^{-1}	0.20 – 4008	5 – 50	4 – 11
Potassium ion electrode	K^+		6 – 0 pK	10^{-6} – 1	0.039 – 3910	5 – 50	1 – 9
Nitrate ion electrode	NO_3^-		5 – 0 pNO	10^{-5} – 1	0.62 – 62000	5 – 50	4.6 – 8
Ammonium ion electrode	NH_4^+		5 – 0.3 pNH	10^{-5} – 0.5	0.18 – 9000	5 – 50	2 – 8.5
Fluoride ion electrode	F^-	Crystalized membrane	6 – 1 pF	10^{-6} – 10^{-1}	0.019 – 1900	5 – 45	5 – 6
Chloride ion electrode	Cl^-	Solid-state membrane	4.3 – 1 pCl	5×10^{-5} – 10^{-1}	1.775 – 3550	5 – 60	2 – 11
Bromide ion electrode	Br^-		5.3 – 1 pBr	5×10^{-6} – 10^{-1}	0.40 – 7990	5 – 60	2 – 11
Iodide ion electrode	I^-		6.3 – 1 pI	5×10^{-7} – 10^{-1}	0.0635 – 12690	5 – 60	2 – 11
Copper ion electrode	Cu^{2+}		6.3 – 1 pCu	5×10^{-7} – 10^{-1}	0.032 – 6355	5 – 60	3 – 7
Silver/sulfur ion electrode	Ag^+		6 – 0 pAg	10^{-6} – 1	0.11 – 108000	5 – 80	1 – 9
	S^{2-}		6 – 0 pS	10^{-6} – 1	0.03 – 32000	5 – 50	13 – 14
Lead ion electrode	Pb^{2+}		5 – 1 pPb	10^{-5} – 10^{-1}	2.1 – 21000	5 – 80	3 – 7
Cadmium ion electrode	Cd^{2+}		6 – 1 pCd	10^{-6} – 10^{-1}	1.1 – 11000	5 – 80	3 – 7
Mercury ion electrode	Hg^{2+}		6 – 0 pHg	10^{-6} – 1	2 – 200000	5 – 80	0 – 2

400 Series Portable Meters

	Model	PH400	PC400	EC400	ION400	PION400
pH	Range	0.00 to 14.00 pH		/	/	0.00 to 14.00 pH
	Resolution	0.01 pH		/	/	0.01 pH
	Accuracy	±0.01 pH ±1 digit		/	/	±0.01 pH ±1 digit
	Temp. Compensation	0 to 100°C (32 to 212°F) Auto. or Manual		/	/	0 to 100°C Auto or Manual
	Calibration	1-3 Points Auto. Calibration		/	/	1-3 Points Auto. Calibration
mV	Range	-1000 to 1000 mV		/	-1999 to 1999 mV	
	Resolution	1 mV		/	1 mV	
	Accuracy	±0.2% F.S		/	±0.2% F.S	
Cond.	Range	/	Conductivity 0 to 200 mS/cm, include: (0.00 to 19.99) µS/cm; (20.0 to 199.9) µS/cm; (200 to 1999) µS/cm; (2.00 to 19.99) mS/cm; (20.0 to 199.9) mS/cm; TDS: (0 to 100) g/L		/	
	Resolution	/	0.01/0.1/1 µS/cm; 0.01/0.1 mS/cm		/	
	Accuracy	/	±1.0% F.S		/	
	Temp. Compensation	/	0 to 50°C (32 to 122°F) Auto or Manual		/	
	Electrode constant	/	0.1 / 1 / 10 cm^{-1}		/	
	Calibration	/	1-4 Points Auto Calibration		/	
Ion	Range	/	/		pX: 0.00 to 10.00 Ion concentration: 0 to 1999 switchable unit: pX, mol/L, ppm (mg/L)	
	Resolution	/	/		3 to 4 significant figures	
	Accuracy	/	/		±1.0% F.S	
	Built-in Ion Types	/	/		Ca^{2+}, NH_3, NH^{4+}, NO^{3-}, Cu^{2+}, Cl^-, Br^-, Pb^{2+}, Cd^{2+}, CN^-, Na^+, F^-, I^-, K^+, Ag^+, S^{2-}, X (user-defined ion)	
	Temp. Compensation	/	/		0 to 100°C (32 to 212°F) Auto. or Manual	
	Calibration				1 to 3 point Manual Calibration	
Temp.	Range	0 to 100°C (32 to 212°F)				
	Resolution	0.1 °C				
	Accuracy	±0.5 °C				
Others	Power Supply	AA Batteries (1.5V*4)				
	IP Rating	IP57 Waterproof and Dustproof				

400S Series Portable Meters

	Model	PH400S	PC400S	EC400S	ION400S	PION400S
pH	Range	-2.00 to 19.99 pH		/	/	-2.00 to 19.99 pH
	Resolution	0.1/0.01 pH		/	/	0.1/0.01 pH
	Accuracy	±0.01 pH ±1 digit		/	/	±0.01 pH ±1 digit
	Temp. Compensation	0 to 100°C (32 to 212°F) Auto. or Manual		/	/	0 to 100°C Auto. or Manual
	Calibration	1-5 Points Auto. Calibration		/	/	1-5 Points Auto. Calibration
mV	Range	-1999 to 1999 mV		/	-1999 to 1999 mV	
	Resolution	1 mV		/	1 mV	
	Accuracy	±0.1% F.S		/	±0.1% F.S	
Cond.	Range	/	Conductivity: 0 to 200 mS/cm, including: (0.00 to 19.99) µS/cm; (20.0 to 199.9) µS/cm; (200 to 1999) µS/cm; (2.00 to 19.99) mS/cm; (20.0 to 199.9) mS/cm; TDS: (0 to 100) g/L Salinity: (0 to 100) ppt; Resistivity: (0 to 100) MΩ·cm	/	/	
	Resolution	/	0.01/0.1/1 µS/cm 0.01/0.1 mS/cm		/	/
	Accuracy	/	±1.0% F.S		/	/
	Temp. Compensation	/	0 to 50°C (32 to 122°F) Auto or Manual		/	/
	Electrode constant	/	0.1 / 1 / 10 cm^{-1}		/	/
	Calibration	/	1-4 Points Auto. Calibration		/	/
Ion	Range	/	/		pX: 0.00 to 10.00 Ion concentration: 0 to 1999 switchable unit: pX, mol/L, ppm (mg/L)	
	Resolution	/	/		3 to 4 significant figures	
	Accuracy	/	/		±1.0% F.S	
	Built-in Ion Types	/	/		Ca^{2+}, NH_3, NH^{4+}, NO^{3-}, Cu^{2+}, Cl^-, Br^-, Pb^{2+}, Cd^{2+}, CN^-, Na^+, F^-, I^-, K^+, Ag^+, S^{2-}, X (user-defined ion)	
	Temp. Compensation	/	/		0 to 100°C (32 to 212°F) Auto. or Manual	
	Calibration	/	/		1 to 3 point Manual Calibration	
Temp.	Range	0 to 100°C (32 to 212°F)				
	Resolution	0.1 °C				
	Accuracy	±0.5 °C				
Others	Data Storage	500 sets	1000 sets	500 sets	500 sets	1000 sets
	Storage Content	Numbering, Date, Time, Measurements, Unit, Temperature				
	Data Output	USB – PC-Link Software				
	Auto. Timing Data Logger	Yes				
	Power Supply	AA Batteries (1.5V*4) / USB				
	IP Rating	IP57 Waterproof and Dustproof				

WS Series Fluoride Portable Meters

Main Features

- ATC Fluoride ion electrode - no need for stirring or adding reagents, directly measuring the ion concentration of fluoride in an accurate, quick, and simple manner
- 2-point auto. calibration for Fluoride with ready-to-use Fluoride ion calibration solutions in the kit
- Equipped with an ATC pH and a conductivity electrode, testing Fluoride, pH, conductivity, TDS, salinity, resistivity & temperature with one meter at high accuracy
- Large backlit screen, 800 sets of data storage, self-diagnosis, parameter setup
- Rugged portable design, suitable for both lab and field test

	Model	WS100	WS200
Fluoride	Range	0.02 ppm to 1900 ppm	
	Unit	mg/L, ppm, pF	
	Accuracy	±0.02 ppm or ±5% of reading (whichever is greater)	
	Temp. Compensation	0-80°C Automatic)	
pH	Range	-2.00 to 19.99 pH	
	Resolution	0.1/0.01 pH	
	Accuracy	± 0.01 pH ± 1 digit	
mV	Range	-1999 mV to 1999 mV	
	Accuracy	±0.1% F.S	
Conductivity	Range	/	Conductivity: 0.00 to19.99 µS/cm; 20.0 to 199.9 µS/cm; 200 to 1999 µS/cm; 2.00 to 19.99 mS/cm; 20.0 to 199.9 mS/cm; TDS: 0 to 100 g/L; Salinity: 0 to 100 ppt; Resistivity: 0 to 100 MΩ·cm
	Accuracy	/	±1.0% F.S
	Temp. Compensation	/	0 to 50°C automatic
	Electrode Constant	/	0.1/1/10 cm^{-1}
	Reference Temperature	/	25°C/20°C/18°C
Others	Data Storage	800 sets	
	Power Supply	AA Batteries (1.5V×2)	
	Dimensions and weight	Meter:(65X120X31) mm/180g ; Kit: (360X270X76) mm/1500g	
	IP Rating	IP57 Dustproof and waterproof	

YD300 Water Hardness Meters

Main Features

- Adopting the state-of-the-art electrode method to measure water hardness, consistent with results from EDTA titration method, yet much more convenient and cost-saving
- Patented 601-S 3-in-1 water hardness combination electrode: combines a measuring electrode, a reference electrode, and a temperature electrode all in one
- 99 sets of data storage; automatic calibration and temperature compensation (ATC), auto-lock and power-off
- 8 water hardness units for your choice: mmol/L, mg/L(CaCO3), mg/L(CaO) , mmol/L(Boiler), mg/L(Ca), ˚fH , ˚dH and ˚eH.
- 2-3 point calibration with three ready-to-use calibration solutions (B1, B2 and B3) included in the kit
- Complete kit in a rugged carrying case; suitable for both lab and field test

	Model	YD300
Water Hardness	Range	(0 to 10) mmol/L; (0 to 401) mg/L(Ca); (0 to 1000) mg/L(CaCO3); (0 to 100) °fH (France Degree); (0 to 561) mg/L (CaO); (0 to 56) °dH (German Degree); (0 to 20) mmol/L (Boiler); (0 to 70) °eH (England Degree)
	Resolution	0.01 / 0.1 water hardness unit
	Accuracy	±5% F.S
	Temp. compensation range	(5 to 50°C) automatic
	Calibration Solution	B1 Calibration Solution — 2.00×10-2 mmol/L; B2 Calibration Solution — 2.00×10-1mmol/L; B3 Calibration Solution — 2.00 mmol/L
	Calibration Mode	a) B1/B2 Calibration—using B1 and B2 Calibration Solution, suitable for < 2.00×10-2 mmol/L low concentration water quality, for example, boiler water. b) B2/B3 Calibration—using B2 and B3 Calibration Solution, suitable for general water solutions.
Temperature	Range	0-60°C (32 – 140˚F)
	Resolution	0.1°C/˚F
	Accuracy	±0.5°C/±1˚F
Others	Data Storage	99 sets
	Storage Content	numberings, measurement, unit, temperature
	Power	AA Batteries (1.5V×2)
	Dimension and Weight	Meter: (65×120×31)mm/180g; Kit: (255×210×50)mm/790g
	IP rating	IP57 Dustproof and waterproof

910 Series Benchtop Meters

PH910 pH Meter pH/mV/Temp.

EC910 Conductivity Meter Conductivity/TDS/Temp.

PC910 pH/Conductivity Meter pH/mV/Conductivity/TDS/Temp.

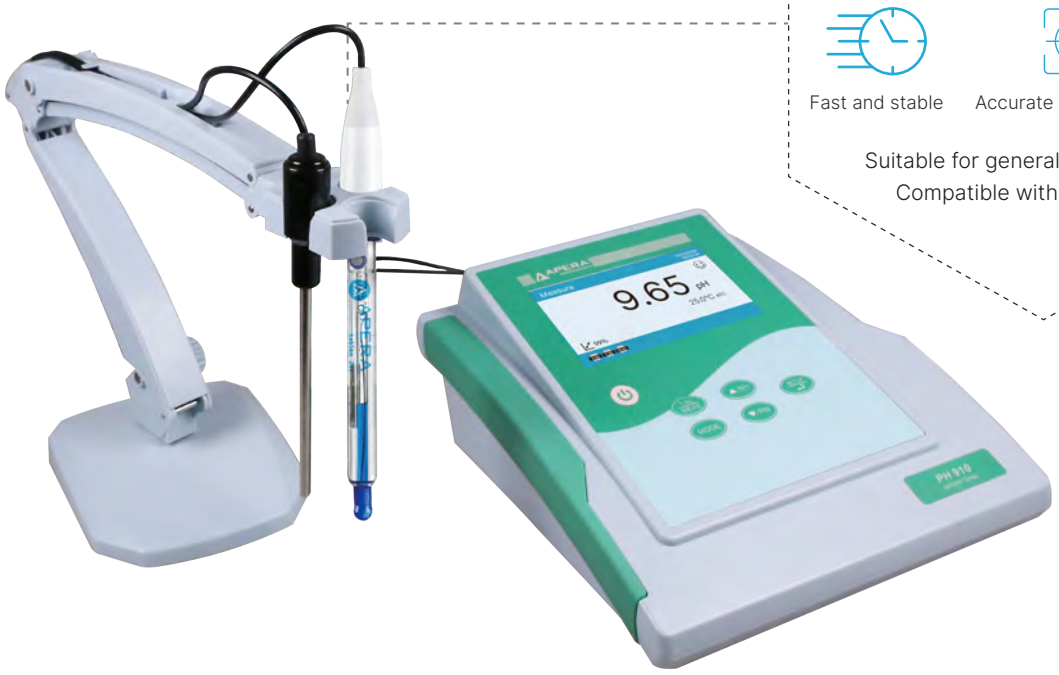
Main Features

- Equipped with Swiss LabSen® Long-life Refillable pH Electrode, TRIS buffer compatible
- GLP data management with measurement data, time, calibration info, and USB data output
- Multi-language operating system (English, Spanish, German, Frech, Italian, Chinese, Japanese)
- Simultaneous measurement and display of pH and conductivity/TDS (PC910 only)

LabSen® 211 Glass-body pH electrode powered by Swiss sensor tech

Fast and stable | Accurate measurement | Durable

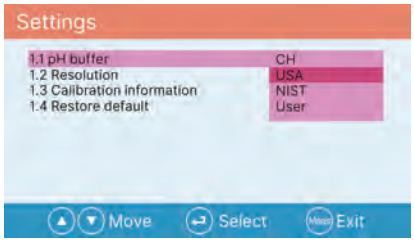
Suitable for general water solutions. Compatible with TRIS buffers.



TFT Display

Measurement Mode

Calibration Mode



Parameter setting mode

950 Series Benchtop Meters

PH950 pH Meter pH/mV/Temp.

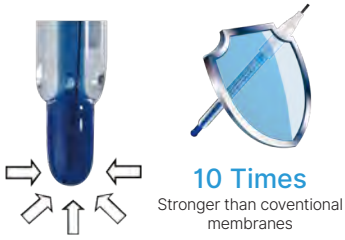
EC950 Conductivity Meter Conductivity/TDS/Temp.

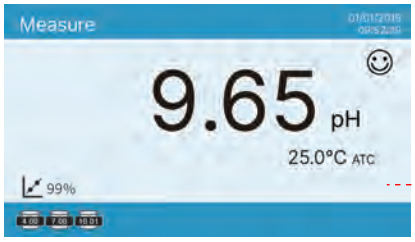
PC950 pH/Conductivity Meter pH/mV/Conductivity/TDS/Temp.

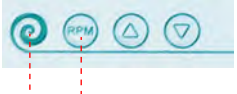
Main Features

- Everything in 910 Series, plus a Multifunctional Test-bench with an intelligent stirrer, a flexible electrode holder, and solution organizers for streamlining your calibration and measuring process.

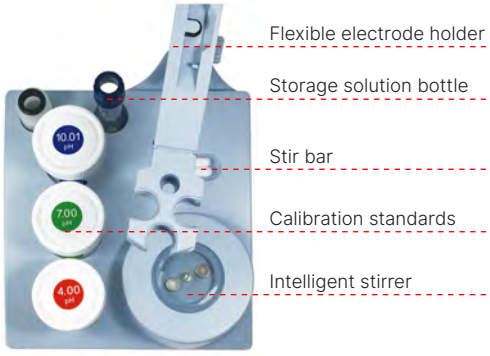
Robust LabSen® glass membrane







Press (RPM) key 3s to save rotation speed and display (H) icon, adjust rotation speed (S) icon will be displayed, press (RPM) key again to switch (H) to (S) (two different speed)



(a) Connect to use

(b) Separate to use

9500 Series Research-grade Benchtop Meters

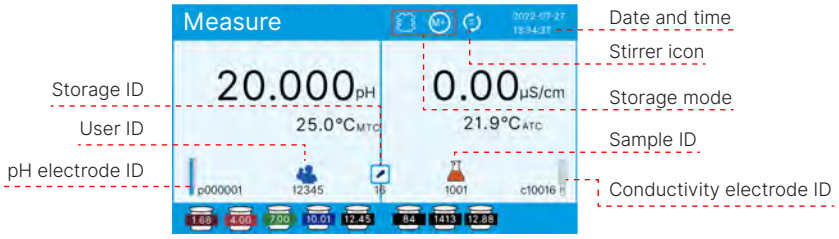
PH9500 pH Meter pH/mV/Temp.

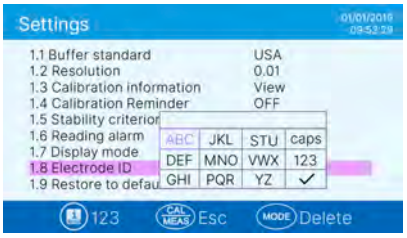
EC9500 Conductivity Meter Cond./TDS/Salinity/Resistivity/Temp.

PC9500 pH/Conductivity Meter pH/mV/Cond./TDS/Salinity/Resistivity/Temp.

Main Features

- Highest Accuracy: ±0.002 pH; ±0.5% F.S
- Complete GLP data management with virtual keyboard input for user ID, sample ID, password protection, and more
- Support external GLP printer
- Equipped with Swiss LabSen® Long-life Refillable pH Electrode, TRIS buffer compatible
- Multi-language operating system for English, Spanish, Chinese, Japanese, German, French, Italian





Built-in virtul keyboard for GLP data input

Stirrer power socket

Printer connection

Computer connection

Press to display on-screen guidance

pH Meter Model Comparison

	Model	PH910	PH950	PH9500
Parameter		pH/mV/°C(°F)		
pH	Range	0 to 14.00 pH		-2.000 to 20.000 pH
	Resolution	0.1 / 0.01 pH		0.1/0.01/0.001 pH
	Accuracy	±0.01 pH±1 digit		±0.002 pH±1 digit
	Temp. compensation	0 to 100°C, automatic or manual		
	Calibration	1 to 3 points automatic		1 to 5 points automatic
	Buffer	USA/NIST/CH		USA/NIST/DIN/CH/User
	Calibration reminder	No		Yes
	Calibration data checking	Yes		
	Reading alarm	No		Yes
	Reading stability criterion	No		Low-Middle-High
mV	Range	-2000 mV to 2000 mV		
	Resolution	1 mV		0.1/1 mV
	Accuracy	±0.1% F.S		±0.03% F.S
Temp.	Range	0 to 100.0°C		-10 to 110.0°C
	Resolution	0.1°C		
	Accuracy	±0.5°C		
Others	Automatic hold	Yes		
	Date and time	Yes		
	Data storage	100 sets		1000 sets
	Auto. timing data logger	Yes		
	Self diagnosis information	Yes		
	USB output	Yes		
	Input ID for sample, electrode, and operator	No		Yes
	Calibration password protection	No		Yes
	Supports GLP printer	No		Yes (printer sold separately)
	Virtual keyboard	No		Yes
	Electrode holder	602 flexible holder	606 Test-bench (with intelligient stirrer)	
	IP Rating	IP54 splash-proof		
Others	Power	DC9V		
	Dimension and Weight	200×220×100mm; 0.95kg	360×165×400mm; 1.25kg	
	Electrode Connection	BNC for pH/ORP; RCA for temp.		

900 Series Benchtop Meter

Conductivity Meter Model Comparison



	Model	EC910	EC950	EC9500
Parameter		Cond./TDS/Sal/°C(°F)		Cond./TDS/Sal/Res/°C(°F)
Cond.	Range	0 to 200.0 mS/cm		0 to 2000 mS/cm
	Resolution	0.1/1 µS, 0.01/0.1 mS		0.01/0.1/1 µS,0.01/0.1/1 mS
	Accuracy	±1% F.S		±0.5% F.S
	Electrode constant	0.1/1.0/10.0 cm-1		
	Temp. compensation	0 to 50°C, automatic or manual		
	Reference temperature	15 to 30 °C		
	Temp. compensation coefficient	0 to 10.00%/°C		
	Calibration	1 to 4 points automatic		
	Calibration standard	USA/CH	USA/CH	USA/CH/User-defined
	Calibration reminder	No		Yes
	Calibration data checking	Yes		
	Reading alarm	No		Yes
TDS	Range	0.1 mg/l to 100 g/l		0.1 mg/l to 500 g/l
	TDS coefficient	0.40 to 1.00		
Salinity	Range	0 to 100 ppt		
Resistivity	Range	No		0 to 20MΩ.cm
Temp.	Range	0 to 100.0°C		-10 to 110.0°C
	Resolution	0.1°C		
	Accuracy	±0.5°C		
Other	Automatic hold	Yes		
	Date and time	Yes		
	Data storage	100 sets		1000 sets
	Auto. timing data logger	Yes		
	Self-diagnosis information	Yes		
	USB output	Yes		
	Input ID for sample, electrode, and operator	No		Yes
	Calibration password protection	No		Yes
	Supports GLP printer	No		Yes (printer sold separately)
	Virtual keyboard	No		Yes
	Electrode holder	602 flexible holder	606 Test-bench (with intelligent stirrer)	
	IP Rating	IP54 splash-proof		
	Power	DC9V		
	Dimension and Weight	200×220×100mm; 0.95kg	360×165×400mm; 1.25kg	
	Electrode Connection	BNC for conductivity; RCA for temp.		

pH/Cond. Meter Model Comparison



	Model	PC910	PC950	PC9500
Parameter		pH/mV/Cond/TDS/Sal/°C(°F)		pH/mV/Cond/TDS/Sal/Res/°C(°F)
pH	Range	0 to 14.00 pH		-2.000 to 20.000 pH
	Resolution	0.1/0.01 pH		0.1/0.01/0.001 pH
	Accuracy	±0.01 pH±1 digit		±0.002 pH±1 digit
	Temp. compensation	0 to 100°C, automatic or manual		
	Calibration	1 to 3 points automatic		1 to 5 points automatic
	Buffer	USA/NIST/CH		USA/NIST/DIN/CH/User-defined
	Other specifications are the same with previous tables (calibration reminder, calibration data checking, reading alarm, stability setting)			
mV	Range	-2000 mV to 2000 mV		
	Resolution	1 mV		0.1/1 mV
	Accuracy	±0.1% F.S		±0.03% F.S
Conductivity	Range	0 to 200.0 mS/cm		0 to 2000 mS/cm
	Resolution	0.1/1μS, 0.01/0.1mS		0.01/0.1/1μS, 0.01/0.1/1mS
	Accuracy	±1%F.S		±0.5%F.S
	Electrode constant	0.1/1.0/10.0 cm^{-1}		
	Temp. compensation	0 to 50°C (32 to212°F) , automatic or manual		
	Reference temperature	15 to 30°C		
	Temp. compensation coefficient	0 to 10.00%/°C		
	Calibration	1 to 4 points automatic		
	Calibration standard	USA/CH		USA/CH/User
	Other specifications are the same with table2 (calibration remind, calibration data checking, reading alarm)			
TDS	Range	0.1mg/l to 100 g/l		0.1mg/l to 500 g/l
	TDS coefficient	0.40 to 1.00		
Salinity	Range	0 to 100 ppt		0 to 100 ppt
Resistivity	Range	No		0 to 20 MΩ.cm
Temp.	Range	0 to 100.0°C		-10 to 110.0°C
	Resolution	0.1°C; 0.1/1°F		
	Accuracy	±0.5°C		
Others	Automatic hold	Yes		
	Date and time	Yes		
	Data storage	200 sets		2000 sets
	Auto. timing data logger	Yes		Yes
	Self diagnosis information	Yes		Yes
	USB output	Yes		Yes
	Input ID for sample, electrode, and operator	No		Yes
	Calibration password protection	No		Yes
	Supports GLP printer	No		Yes (printer sold separately)
	Virtual keyboard	No		Yes
	Electrode holder	602 flexible holder	606 Test-bench (with intelligent stirrer)	
	IP Rating	IP54 splash-proof and dust-proof		
	Power	DC9V		
	Dimension and Weight	200×220×100mm; 0.95kg	360×165×400mm; 1.25kg	
	Electrode	BNC for pH/ORP/conductivity; RCA for temp.		

800/820 Series Benchtop Meters

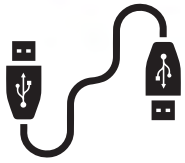
800 Series Benchtop pH / Conductivity Meter

Accurate Measurement

- Fast-response ATC pH & conductivity electrodes provide high accuracy in wide measuring ranges.
- Advanced digital filtering technology improves measurement precision.
- Easy and quick auto. calibration with recognition of up to 15 buffer types

Intelligent Functions

- GLP Data Management, 500 sets of data storage with USB data output.
- Slope Data Display during calibrations, showing the health condition of your probes
- Calibration Reminder and Calibration Data Check to ensure you are taking accurate measurements.



Reliable Structure

- Comes with a flexible electrode holder for up to 3 electrodes
- Large backlit LCD screen for clear reading
- IP54 splash-proof and dust-proof

820 Series Precision Benchtop pH / Conductivity Meter

Everything in 800 Series and Higher Accruracy
(±0.002 pH & ±0.5% F.S in conductivity)

pH Measurement Features

- Equipped with the Swiss LabSen 211 Refillable Long-Life pH electrode, TRIS buffer compatible
- 1-5 points of auto calibration with self-diagnosis, calibration record check, and calibration reminder
- Recognizes up to 15 types of pH standard buffers (3 optional series: US/NIST/CH)
- 2-point customized calibration is available

Conductivity Measurement Features

- Equipped with 2401T-F high-precision glass-body conductivity electrode.
- 1-4 points of auto calibration with self-diagnosis
- Fully customizable settings for TDS conversion factor, temp. compensation coefficient, and more.
- Recognizes up to 8 types of conductivity standard solutions (2 optional series: US/NIST)
- 1-point customized calibration is available

Model	LabSen 211 Glass pH Electrode
Measuring Range	-5 to 100˚C (23 to 212˚F)
Material	Lead-Free Glass
Refillable	Yes
Junction	Ceramic
Reference	Long-Life
Electrolyte	Gel 3M KCl
Membrane Type	S
Connector	BNC
Applications	This robust glass pH electrode with long-life reference system is ideal for high-accuracy general-purpose pH measurement.

800/820 Series Benchtop Meter

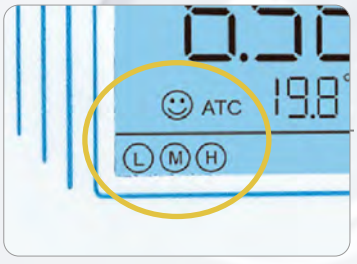
	Model	PH800	PC800	EC800
pH	Electrode	201T-F 3-in-1 Plastic Combination pH Electrode		/
	Measuring Range	(-2.00 to 19.99) pH		/
	Resolution	0.1/0.01 pH		/
	Accuracy	±0.01 pH ±1 digit		/
	Calibration	1-3 points Auto Calibration		/
	Temp. Compensation	0 to 100°C (32 to 212°F) Auto or Manual		/
mV	Measuring range	±1999 mV		/
	Resolution	1 mV		/
	Accuracy	±0.1% F.S		/
Cond.	Electrode	/	2301T-F Plastic Conductivity Electrode	
	Measuring Range	/	Conductivity: 0 to 2000 mS/cm, include: (0.00 to 19.99) µS/cm (20.0 to 199.9) µS/cm (200 to 1999) µS/cm (2.00 to 19.99) mS/cm (20.0 to 199.9) mS/cm	
		/	TDS: (0 to 100) g/L	
		/	Salinity: (0 to 100) ppt	
		/	Resistivity: (0 to 100) MΩ·cm	
	Resolution	/	0.01/0.1/1 µS/cm; 0.01/0.1 mS/cm	
	Accuracy	/	±1.0% F.S	
	Calibration	/	1-4 points Auto Calibration	
	Temp. Compensation	/	0 to 50°C (32 to 122°F) Auto or Manual	
	Electrode constant	/	K=0.1/1/10 cm^{-1}	
Temp.	Measuring Range	0 to 100°C (32 to 212°F)		
	Resolution	0.1°C/°F		
	Accuracy	±0.5°C/±1°F		
Others	Data Storage	500 Sets		
	Storage Content	Numberings, Date, Time, Measurements, Unit, and Temperature		
	Data Output	USB – PC-Link Software		
	Timing Data Logging	Yes		
	Pure Water Mode	Yes		
	Power Supply	DC9V/300mA		
	IP Rating	IP54 Splashproof and Dustproof		
	Dimensions and Weight	(240*235*103) mm/1kg		
	Electrode Connection	BNC for pH/ORP, RCA for temp.	BNC for conductivity, RCA for temp.	BNC for pH/conductivity/ORP, RCA for temp.

	Model	PH820	PC820	EC820
pH	Electrode	LabSen 211 Long-Life Glass pH Combination Electrode		/
	Measuring Range	(-2.000 to 19.999) pH		/
	Resolution	0.1/0.01/0.001 pH		/
	Accuracy	±0.002 pH ±1 digit		/
	Calibration	1-3 point or 1-5 point Auto. Calibration		/
	Temp. Compensation	0 to 100°C (32 to 212°F) Auto or Manual		/
mV	Measuring range	±1999.9 mV		/
	Resolution	0.1 mV		/
	Accuracy	±0.03% F.S		/
Cond.	Electrode	/	2401T-F Glass Conductivity Electrode	
	Measuring Range	/	Conductivity: 0 to 2000 mS/cm, include: (0.00 to 19.99) µS/cm (20.0 to 199.9) µS/cm (200 to 1999) µS/cm (2.00 to 19.99) mS/cm (20.0 to 199.9) mS/cm (200 to 1999) mS/cm	
		/	TDS: (0 to 100) g/L	
		/	Salinity: (0 to 100) ppt	
		/	Resistivity: (0 to 100) MΩ·cm	
	Resolution	/	0.01/0.1/1 µS/cm; 0.01/0.1/1 mS/cm	
	Accuracy	/	±0.5% F.S	
	Calibration	/	1-4 points Auto Calibration	
	Temp. Compensation	/	0 to 50°C (32 to 122°F) Auto or Manual	
	Electrode constant	/	K=0.1/1/10 cm^{-1}	
Temp.	Electrode	MP500 Temperature Electrode		/
	Measuring Range	-10 to 110°C (14 to 230°F)		
	Resolution	0.1°C/°F		
	Accuracy	±0.4°C/±0.9°F		
Others	Data Storage	500 Sets	1000 Sets	500 Sets
	Storage Content	Numberings, Date, Time, Measurements, Unit, and Temperature		
	Data Output	USB – PC-Link Software		
	Timing Data Logging	Yes		
	Pure Water Mode	Yes		
	Power Supply	DC9V/300mA		
	IP Rating	IP54 Splash-proof and Dust-proof		
	Dimensions and Weight	(240*235*103) mm/1kg		
	Electrode Connection	BNC for pH/ORP, RCA for temp.	BNC for conductivity, RCA for temp.	BNC for pH/conductivity/ORP, RCA for temp.

700 Series Benchtop Meters

Simple electrode holder can be installed on either side

Meter sockets with rubber boot protection, conforming to IP54 rating.



Icons for stable readings and finished calibrations

Press this key to show the maximum and minimum readings during a certain period.

- **PH700 pH Meter** pH/mV/Temp.
- **EC700 Conductivity Meter** Conductivity/TDS/Temp.

Main Features

- Equipped with ATC pH and conductivity electrodes
- 1 to 3 points pH automatic calibration with pH slope display and self-diagnosis
- 1 to 4 points conductivity automatic calibration with self-diagnosis
- Manual data logger with 50 sets of data storage

Technical Specifications

	Model	PH700	EC700
Parameter		pH/mV/°C(°F)	Conductivity/TDS/°C(°F)
pH	Range	0 to 14.00 pH	/
	Resolution	0.1/0.01 pH	/
	Accuracy	±0.01 pH ±1 digit	/
	Temp. Compensation	0 to 100 ˚C; 32 to 212°F (Auto or Manual)	/
	Calibration	1 to 3 point auto. calibration	/
mV	Range	1999 mV - 0 - 1999 mV	/
	Resolution	1 mV	/
	Accuracy	±0.1% F.S	/
Cond.	Range	/	Conductivity: 0-200.0 mS/cm, divided into 4 ranges: (0-199.99) µS/cm, (200-1999) µS/cm, (2.00-19.99) mS/cm, (20.0-199.9) mS/cm TDS: (0-100) g/L, devided into 4 ranges: (0-99.9) mg/L, (100-999) mg/L, (1.00-9.99) g/L, (10.0-100.0) g/L
	Resolution	/	Conductivity: 0.1/1 µS/cm; 0.01/0.1 mS/cm TDS: 0.1/1 mg/L, 0.01/0.1 g/L
	Accuracy	/	±1.0% F.S
	Temp. Compensation	/	0 to 50 ˚C (Auto or Manual)
	Reference Temperature	/	25°C (77°F)
	Temperature Coefficient	/	0.00-9.99%/ ˚C, default value: 2.00%/ ˚C
	Electrode Constant	/	0.1/1/10 cm^{-1}
	Calibration	/	1 to 4 Point auto. calibration
Temp.	Range	0 to 100˚C; 32 to 212°F	
	Resolution	0.1˚C; 0.1/1°F	
	Accuracy	±0.5˚C/±1.0˚F	
Others	Data Storage	50 sets	
	Storage Content	Numberings, Measurement, Unit, Temperature, Temp. compensation status	
	Power Supply	DC9V/300mA	
	IP Rating	IP54 dust-proof and splash-proof	
	Electrode Connection	BNC for pH or ORP; RCA for temperature	BNC for conductivity; RCA for temperature
	Dimensions and Weight	(240*235*103) mm/1kg	

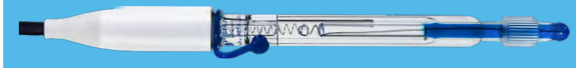
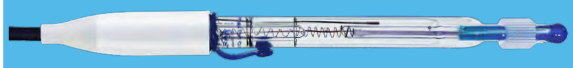
LabSen® pH Electrodes

LabSen® pH electrodes are made with state-of-the-art sensor technologies and premium materials from Switzerland, tailored for your specific applications.

Refer to the LabSen® pH Electrode Handbook for more details.

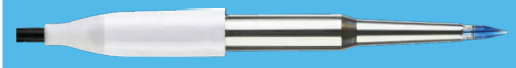
Model	pH Range	Temp. Range	Connector	Features& Applications
LabSen 211 	0 to 14 pH	23 to 212˚F (-5 to 100˚C)	BNC	Refillable general-purpose pH electrode with long-life reference, providing fast and accurate pH measurement. Compatible with TRIS buffers.
LabSen 213 			BNC/RCA	
LabSen 221 	0 to 14 pH	23 to 212˚F (-5 to 100˚C)	BNC	Refillable, movable sleeve junction, good for general purpose and lower ionic strength samples, fast response and stable reading.
LabSen 223 			BNC/RCA	
LabSen 231 	0 to 14 pH	23 to 176˚F (-5 to 80˚C)	BNC	Non-refillable, open junction, no clogging, maintenance free, suitable for wastewater, emulsion, suspension, slurries, and other dirty liquids
LabSen 331 	0 to 14 pH	32 to 176˚F (0 to 80˚C)	BNC	POM body, open junction, polymer electrolyte, no clogging, no refilling and maintenance free, suitable for wastewater, emulsion, suspension, slurries, and other dirty liquids.
LabSen 333 			BNC/RCA	
LabSen 335 			8-pin	

Swiss sensor tech

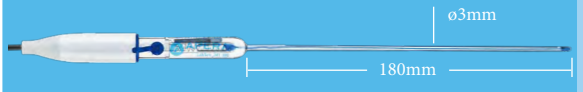
Model	pH Range	Temp. Range	Connector	Features& Applications
LabSen 801 	0 to 11 pH	32 to 176˚F (0 to 80˚C)	BNC	Refillable, movable sleeve junction, fast and accurate reading, for pure water, e.g. drinking water, RO water, distilled water, storm water, boiler water, etc.
LabSen 803 			BNC/RCA	
LabSen 805 			8-pin	
LabSen 811 	0 to 11 pH	32 to 176˚F (0 to 80˚C)	BNC	Refillable, movable sleeve, double junction, suitable for ultra-pure water (conductivity< 2 µS/cm), fast response and stable reading.
LabSen 813 			BNC/RCA	
LabSen 871 	1 to 13 pH	32 to 176˚F (0 to 80˚C)	BNC	Refillable, PHY membrane, double junction with glass movable sleeve, made for quick and stable measurement in organic solvents and non-aqueous solutions.
LabSen 873 			BNC/RCA	
LabSen 881 	0 to 11 pH	-22 to 176˚F (-30 to 80˚C)	BNC	Refillable, for solutions with low temperature. Low membrane impedance, 3 ceramic junctions and Protelyte electrolyte
LabSen 251 	0 to 14 pH	32 to 176˚F (0 to 80˚C)	BNC	Glass body, suitable for soft solid samples, e.g. cheese, fruits, dough, vegetables, and sushi etc.

LabSen® pH Electrodes

Refer to the LabSen® pH Electrode Handbook for more electrode details.

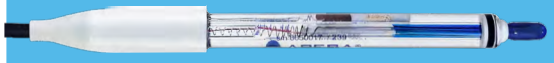
Model	pH Range	Temp. Range	Connector	Features& Applications
LabSen 551 	0 to 14 pH	32 to 176˚F (0 to 80˚C)	BNC	The PVC body effectively protects the glass tube. In addition to soft solid samples, it is more suitable for in-field measurement, such as direct soil testing.
LabSen 553 			BNC/RCA	
LabSen 751 	0 to 14 pH	32 to 176˚F (0 to 80˚C)	BNC	The food-grade titanium alloy body effectively protects the glass rod, no corrosion, more suitable for solid and semi-solid food testing, e.g. cheese, dough, meat product, fruit, etc.
LabSen 753 			BNC/RCA	
LabSen 761 	0 to 14 pH	32 to 176˚F (0 to 80˚C)	BNC	The titanium blade easily cuts into fresh or frozen meats, fish, and other solid samples to measure pH directly.
LabSen 763 			BNC/RCA	
LabSen 765 			8-pin	
LabSen 371 	0 to 14pH	32 to 176˚F (0 to 80˚C)	BNC	PVC body, flat glass membrane, PTFE junction, suitable for flat surface measurement, e.g. paper, skin, textiles, leather, and etc.
LabSen 373 			BNC/RCA	

Swiss sensor tech

Model	pH Range	Temp. Range	Connector	Features& Applications
LabSen 241-6 	0 to 14 pH	32 to 212˚F (0 to 100˚C)	BNC	Semi-Micro pH electrode suitable for test tubes and small-volume sample solutions (>0.2 mL). Minimum test volume is 60µL with the use of Apera's semi-micro container.
LabSen 243-6 			BNC/RCA	
LabSen 246-5 			8-pin	
LabSen 241-3 	0 to 14 pH	32 to 212˚F (0 to 100˚C)	BNC	Refillable micro pH electrode with stainless steel sheath, suitable for very small containers e.g. micro plates and centrifuge tubes, etc (>30µL). Minimum test volume is 15µL with the use of Apera's micro container.
LabSen 241-3SP 	0 to 14 pH	32 to 212˚F (0 to 100˚C)	BNC	Refillable micro pH electrode with Protelyte electrolyte, suitable for protein-containing solutions such as serum and microbiological samples.
LabSen 241-180 	0 to 14 pH	32 to 212˚F (0 to 100˚C)	BNC	Refillable, the 180mm/ø3mm electrode is suitable for pH measurement in slim and deep containers such as NMR tubes. Minimum sample volume is 50 µL.
LabSen 831 	0 to 12pH	32 to 212˚F (0 to 100˚C)	BNC	Resistant to HF corrosion, suitable for the measurement of HF solution with less than 0.1M concentration (<2000ppm), or other strong acidic solutions, high durability
LabSen 833 			BNC/RCA	
LabSen 835 			8-pin	

LabSen® pH Electrodes

Refer to the LabSen® pH Electrode Handbook for more electrode details.

Model	pH Range	Temp. Range	Connector	Features& Applications
LabSen 841 	1 to 14 pH	32 to 266˚F (0 to 130˚C)	BNC	Special HA glass membrane, suitable for strong alkaline/high salinity solutions, extremely low alkaline error and long service life with silver ion trap reference system
LabSen 843 			BNC/RCA	
LabSen 845 			8-pin	
LabSen 861 	1 to 13 pH	32 to 266˚F (0 to 130˚C)	BNC	Non-refillable, PHY glass membrane, with anti-fouling PTFE junction, suitable for high temperature and caustic solutions e.g. electroplating solutions, etc.
LabSen 863 			BNC/RCA	
LabSen 865 			8-pin	
LabSen 851-H 	0 to 14 pH	32 to 266˚F (0 to 130˚C)	BNC	HA glass membrane, suitable for viscous samples with strong alkaline or high temperature, resistant to high pressure. The pre-pressurized reference system ensures smooth flow of electrolyte.
LabSen 853-H 			BNC/RCA	
LabSen 855 			8-pin	

Swiss sensor tech

Model	pH Range	Temp. Range	Connector	Features& Applications
LabSen 851-S 	0 to 14 pH	23 to 212˚F (-5 to 100˚C)	BNC	S glass membrane, suitable for viscous sample measurement, e.g. cosmetics, paint, resin, etc. The pre-pressurized reference system ensures smooth flow of electrolyte.
LabSen 853-S 			BNC/RCA	
LabSen 821 	0 to 14 pH	23 to 212˚F (-5 to 100˚C)	BNC	Suitable for protein samples, e.g. dairy product, milk, cream, etc. Three ceramic junctions and the Protelyte reference electrolyte prevent the junctions from being clogged by proteins
LabSen 823 			BNC/RCA	

Connectors

Connector	Picture	Remarks
Waterproof BNC		Standard BNC
S7		For pH, ORP and conductivity electrodes
S7-BNC cable		Use with S7 connectors
BNC+RCA		For pH electrodes with temperature sensor
8-pin		For pH and conductivity electrodes with temperature sensor

General Electrodes

pH Electrodes

Apera Instruments pH Electrode is made for general water solutions' pH measurement in scientific research environmental monitoring and quality control.

Model	pH Range	Temp. Range	Connector	Applications
201DJ-C Double-Junction pH Electrode  Dimension: ø12*160mm	0 to 14 pH	32 to 176°F (0 to 80°C)	BNC	Made for both lab and in-line continuous testing in general and complex water solutions such as wastewater, pools, environmental monitoring, and etc.
201DJ-F Double-Junction pH/Temp. Electrode  Dimension: ø12*160mm	0 to 14 pH	0 to 14 pH	BNC/RCA	
201-C Combination pH Electrode  Dimension: ø12*160mm	0 to 14 pH	32 to 176°F (0 to 80°C)	BNC	Low impedance lithium membrane for fast response. Lab testing in general water solutions.
201T-F All-in-one pH/Temp. Electrode  Dimension: ø12*160mm	0 to 14 pH	32 to 176°F (0 to 80°C)	BNC/RCA	
201T-S 3-in-1 pH/temperature Electrode  Dimension: ø12*160mm	0 to 14 pH	32 to 176°F (0 to 80°C)	8-pin	

Conductivity Electrodes

Apera Instruments conductivity Electrode is made for general water solutions' conductivity measurement in scientific research environmental monitoring and quality control.

Model	Cond. Range	Electrode Constant	Temp. Range	Connector	Features
2301-C Plastic Conductivity Electrode  Dimension: ø12*155mm	0 to 200 mS/cm	K=1.0	32 to 122°F (0 to 50°C)	BNC	Firm platinum black sensor ensures high accuracy in a wide range
2301T-F Plastic Conductivity/Temp. Electrode  Dimension: ø12*155mm	0 to 200 mS/cm	K=1.0	32 to 122°F (0 to 50°C)	BNC/RCA	

Conductivity Electrodes

Model	Cond. Range	Electrode Constant	Temp. Range	Connector	Applications
2301T-S Plastic Conductivity/Temp. Electrode  Dimension: ø12*155mm	0 to 200 mS/cm	K=1.0	32 to 122°F (0 to 50°C)	8-pin	Firm platinum black sensor ensures high accuracy in a wide range
2310-C Plastic Conductivity Electrode  Dimension: ø12*145mm	20 to 2000 mS/cm	K=10	32 to 176°F (0 - 80°C)	BNC	±10% accuracy in high-range conductivity measurement even without calibration
2310T-F Plastic Conductivity/Temp. Electrode  Dimension: ø12*145mm	20 to 2000 mS/cm	K=10	32 to 176°F (0 - 80°C)	BNC/RCA	
2401-C Conductivity Electrode  Dimension: ø12*145mm	0 to 200 mS/cm	K=1.0	32 to 122°F (0 to 50°C)	BNC	for high-accuracy lab conductivity measurements
2401T-F Conductivity/Temp. Electrode  Dimension: ø12*145mm	0 to 200 mS/cm	K=1.0	32 to 122°F (0 to 50°C)	BNC/RCA	
DJS-0.1-C Conductivity Electrode  Dimension: ø12*155mm	0 to 200 µS/cm	K=0.1	32 to 122°F (0 to 50°C)	BNC	for pure water and low conductivity measurements.
DJS-0.1-F Conductivity/Temp. Electrode  Dimension: ø12*155mm	0 to 200 µS/cm	K=0.1	32 to 122°F (0 to 50°C)	BNC/RCA	

General Electrodes

ORP Electrodes

Model	ORP Range	Temp. Range	Connector	Sensor	Applications
301Pt-C ORP Combination Electrode  Dimension: ø12*160mm	±2000 mV	0 - 80°C (32 to 176°F)	BNC	Φ6×2.5mm platinum ring	Lab and field test of general water solutions
301Pt-S ORP Combination Electrode  Dimension: ø12*160mm	±2000 mV	0 - 80°C (32 to 176°F)	8-pin	Φ6×2.5mm platinum ring	
301DJ-CG Gold ORP Combination Electrode  Dimension: ø12*160mm	±2000 mV	0 - 80°C (32 to 176°F)	BNC	Φ1×5mm gold needle	Made for both lab and in-line continuous testing in general and complex water solutions such as wastewater, pools, hydroponics solutions, etc.
301DJ-C ORP Combination Electrode  Dimension: ø12*160mm	±2000 mV	0 - 80°C (32 to 176°F)	BNC	Φ0.8×3mm platinum needle	
334 High-temp. ORP Combination Electrode  Dimension: ø12*160mm	±2000 mV	0 - 130°C (32 to 266°F)	Customized	Φ6×2.5mm platinum ring	Made for both lab and in-line continuous testing in high-temp. water solutions.

DO Electrodes

Model	DO Range	Response Time	Temp. Range	Features
DO500 Polarographic DO Probe  Dimension: ø15*180mm Connector: 8-pin	(0-20.00) mg/L (ppm), (0-200.0) %	**≤60s** (25°C, 90% response)	0 to 40°C	• Comes with the calibration sleeve. • Integrated temperature and salinity sensors for auto. compensation • Replaceable DO membrane cap (3 replacement membrane caps and an inner solution refill are included
DO803 Luminescent Optical DO Probe  Dimension: ø12*160mm Connector: 8-pin	(0-20.00) mg/L (ppm), (0-200.0) %	**≤20s** (25°C, 90% response)	0 to 50°C	The optical DO probe does not consume oxygen during test, easy to use; minimal maintenance

ISE Electrodes

Model	Measurment Parameters	Features
IndSen 2071M-X Combination In-line ISE Electrodes  Dimension: ø16*120mm	Na^+, Ca^{2+}, K^+, NO_3^-, NH_4^+, F^-, Cl^-, Br^-, I^-, Cu^{2+}, Ag^+, S^{2-}, Pb^{2+}, Cd^{2+}, Hg^{2+} Refer to Page 36 for detailed specifications	IndSen Ultra-firm PVC membrane electrode adopts innovative technologies, including the solid electrolyte, active material reservoir, and a rugged structure.

Model	Measuring Range	Temp. Range	Thermistor	Features
Fluoride Ion Electrode **F501-S** 3-in-1 Fluoride Ion Electrode  Dimension: ø12*160mm Connector: 8-pin	0.02 ppm to 1900 ppm	(0 to 80)°C (32 to 176°F)	30KΩ	The F501-S Fluoride Ion Electrode is the replacement electrode for Apera WS100/WS200 Fluoride Meter. It's featured with a 3-in-1 combination structure, which gives you quick and accurate measuremement for fluoride ion.

Model	Measuring Range	Temp. Range	Thermistor	Features
Water Hardness Electrodes **601-S** Water Hardness Electrode  Dimension: ø12*160mm Connector: 8 pin	(0.015 – 10) mmol/L; (1.5 –1000) mg/L ($CaCO_3$)	15 – 40°C (59 – 104 °F)	30KΩ	The 601-S electrode combines a water hardness measuring electrode, a reference electrode, and a thermistor all in one, is the replacement electrode for Apera YD300 water hardness meter, consistant with results from EDTA titration method, yet much more convenient and cost-saving

Model	Temp. Range	Material	Thermistor	Features
Temperature Electrodes **MP500** Temperature Probe Electrode  Dimension: ø12*145mm Connector: RCA	-10 to 110°C (14 to 230°F)	Stainless Steel probe	30KΩ	MP500 Temperature Probe is ideal for use along with pH or conductivity electrode for temperature compensation to achieve automatic temperature compensation. Compatible with all Apera Instruments with RCA connector.

Solutions

pH Buffer Solutions

Description	Volume	
pH 4.00 Calibration Buffer Solution	8 oz	16 oz
pH 7.00 Calibration Buffer Solution	8 oz	16 oz
pH 10.01 Calibration Buffer Solution	8 oz	16 oz
pH 1.68 Calibration Buffer Solution	8 oz	/
pH 12.45 Calibration Buffer Solution	8 oz	/

Conductivity Standard Solutions

Description	Volume	
84 µS/cm Conductivity Standard Solution	4 oz	8 oz
1413 µS/cm Conductivity Standard Solution	4 oz	8 oz
12.88 mS/cm Conductivity Standard Solution	4 oz	8 oz
111.8 mS/cm Conductivity Standard Solution	4 oz	8 oz

ORP Standard Solutions

Description	Volume
222 mV ORP Standard Solution	8 oz
650 mV ORP Standard Solution	

Description	Volume
pF5.00 Fluoride Ion Standard Solution	4 oz
pF3.00 Fluoride Ion Standard Solution	4 oz

Water Hardness Standard Calibration Solutions Set

Description	Volume
Electrode Cleaning Solution	8 oz

Soaking Solutions

Turbidity Standard Solutions

Model	Description	Volume
	**T200-1** Turbidity Standard Solution Set (20/100/400/800 NTU) for TN400 and TN480	18ml 4pcs/set
	**T500-1** Polymer **AMCO** Turbidity Standard Calibration Solution Set (20/100/400/800NTU) for TN500 and TN420	18ml 4pcs/set
	**T500-2 AMCO** 0 NTU Standard Calibration Solution	100ml

Fluoride Ion Standard Solutions Set

	Description	Volume
	B1 Water Hardness Calibration Solution	4 oz
	B2 Water Hardness Calibration Solution	4 oz
	B3 Water Hardness Calibration Solution	4 oz

Cleaning Solutions

	Description	Volume
	**3M KCL** Soaking/Refill Solution for pH/ORP Electrode	4 oz
	Protelyte pH Electrode Storage Solution	4 oz
	**1M LiCl** Reference Solution	250ml

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APERA® INSTRUMENTS

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