APERA INSTRUMENTS

850 Series
8500 Series

Portable Water Analysis Meter

pH

ORP

Resistivity

TDS

Salinity

DO (Optical)

PC 850
pH/mV/Cond/TDS/Temp

APERA Conductivity K=1.0

APERA reference comb pH/ATC

LabSen 803

APERA LabSen 241-6

3-YEAR WARRANTY
on all instruments

PC 8500
pH/mV/Cond/TDS/Sal/Temp

850 Series Portable Meter

- **PH850 pH Meter** pH/mV/Temp.
- **EC850 Conductivity. Meter** Cond./TDS/Temp.
- **PC850 pH/Conductivity. Meter** pH/mV/Cond./TDS/Temp.

Main features

- Equipped with ATC pH and conductivity electrodes, convenient to use
- The most economical choice for a reliable portable meter
- Simple operation; easy to use

There is rubber cap to seal and protect the connector, better waterproof.

With rubber cover to protect the meter, good hand feeling.

Acrylic transparent window, resistant to scratches, waterproof

With calibration guide and self diagnosis function

Complete kit.

With foldable holder; use as a benchtop meter.

Ergonomic design, suitable for hand operating.

Calibration & operating instruction on the back side.

IP57 waterproof rating

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8500 Series Portable Meter

- **PH8500 pH Meter** pH/mV/Temp.
- **EC8500 Conductivity. Meter** Cond./TDS/Temp.
- **PC8500 pH/Conductivity Meter** pH/mV/Cond./TDS/Temp.

Main Features

- Equipped with ATC pH and conductivity electrodes, convenient to use
- Conform to GLP data management standard
- USB data output

ATC - Automatic temp. compensation
MTC-Manual temp. compensation

☺ icon indicates stable reading

USB communication icon,
to connect with computer.

Calibration solution indicators

Automatic storage icon

Time

Automatic Hold icon

Manual storage icon and number.

White backlit is convenient
to measure in the dark.

IP57 waterproof rating

Combo electrode
simultaneous measurement,
switch to display readings

Portable carrying
case, full set kit.

USB output

USB communicating
function

Use with electrode
stand

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Table 1 Portable pH and cond. Meter Model Comparison

Model		PH850	PH8500	EC850	EC8500
Parameter		pH/mV/Temp		Cond./TDS/Temp	Cond./TDS/Sal/Temp
pH	Range	0 to 14.00 pH	-2.00 to 16.00 pH		
	Resolution	0.1/0.01 pH			
	Accuracy	±0.01 pH±1 digit			
	Temp.compensation	0 to 100 ℃ （32 to212 ℉）, automatic or manual			
	Automatic calibration	1 ~ 3 points	1 ~ 3 points		
	Buffer solution	USA/NIST	USA/NIST/CUS		
	Calibration reminding	No	Yes		
	Calibration time checking	No	Yes		
	Stability setting	Yes	Yes		
mV	Range	±1000mV	±1999mV		
	Resolution	1mV	±0.1/1mV		
	Accuracy	±0.2% FS ±1 digit	±0.1% FS ±1 digit		
Conductivity	Range			0~200.0mS/cm	
	Resolution			0.01/0.1/1μS, 0.01/0.1mS	
	Accuracy			±1%F.S±1 digit	
	Electrode constant			0.1/1.0/10.0 cm-1	
	Auto temp. compensation			0 to 50℃ （32 to122℉）	
	Criterion temperature			15~30 ℃	
	Temp. compensation coefficient			0~9.99%/ ℃	
	Calibration			1~3 points automatic	
	Calibration standard			Standard	Standard/CUS
	Calibration reminding			No	Yes
	Calibration time checking			No	Yes
TDS	Range			0.1mg/l~100 g/l	
	TDS coefficient			0.40~1.00	
Salinity	Range			No	0~100 ppt
Temp.	Range	0~ 100℃; 32.0 ~ 212 ℉			
	Resolution	0.1℃; 0.1/1℉			
	Accuracy	±0.5℃±1 digit; ±0.9℉±1 digit			
Function	Display	LCD （no backlight）	LCD （white backlight）	LCD （no backlight）	LCD （white backlight）
	Stable measuring indication	with ☺icon			
	Automatic hold	Yes	Yes	Yes	Yes
	Date and time	No	Yes	No	Yes
	Data storage	No	500 sets	No	500 sets
	Timing storage	No	Yes	No	Yes
	Self-diagnosis information	Yes	Yes	Yes	Yes
	USB output	No	Yes	No	Yes

Table 2 Portable pH/cond. Meter Model Comparison

Model		PC850	PC8500
Parameter		pH/mV/Cond./TDS/Temp	pH/mV/Cond./TDS/Sal/Temp
pH	Range	0 to 14.00 pH	-2.00 to 16.00 pH
	Resolution	0.1/0.01 pH	
	Accuracy	±0.01 pH±1 digit	
	Temp. compensation	0 to 100℃（32 to212℉），automatic or manual	
	Automatic calibration	1~3 points	1~3 points
	Buffer solution	USA/NIST	USA/NIST/CUS
	Calibration reminding	No	Yes
	Calibration time checking	No	Yes
	Stability setting	Yes	Yes
mV	Range	±1000mV	±1999mV
	Resolution	1mV	±0.1/1mV
	Accuracy	±0.2% FS ±1 digit	±0.1% FS ±1 digit
Conductivity	Range	0~200.0mS/cm	
	Resolution	0.01/0.1/1μS, 0.01/0.1mS	
	Accuracy	±1%F.S ±1 digit	
	Electrode constant	0.1/1.0/10.0 cm-1	
	Auto temp. compensation	0 to 50℃（32 to122℉）	
	Criterion temperature	15~30 ℃	
	Temp. compensation coefficient	0~9.99%/℃	
	Calibration	1~3 points automatic	
	Calibration standard	Standard	Standard/CUS
	Calibration reminding	No	Yes
	Calibration time checking	No	Yes
TDS	Range	0.1mg/l~100 g/l	
	TDS coefficient	0.40~1.00	
Salinity	Range	No	0~100 ppt
Temp.	Range	0~ 100℃；32.0 ~ 212℉	
	Resolution	0.1℃；0.1/1℉	
	Accuracy	±0.5℃±1 digit；±0.9℉±1 digit	
Function	Display	LCD （no backlight）	LCD （white backlight）
	Stable measuring indication	with ☺icon	
	Automatic hold	Yes	Yes
	Date and time	No	Yes
	Data storage	No	500 sets
	Timing storage	No	Yes
	Self-diagnosis information	Yes	Yes
	USB output	No	Yes
	Electrode connector	pH electrode: BNC; Conductivity electrode: 4 pin connector	
	IP rating	IP57 waterproof rating （float on water）	
	Electrode	PH: 201T-F; Conductivity: 2301T-S	
Others	Power	AA battery （1.5V×3）	
	Dimension/weight only meter	88×170×33mm/313g	
	Dimension/weight with case	360×270×76mm/1.3kg	

DO850   DO8500

Portable Optical DO Meter

Main Features

- Automatic temperature and pressure compensation.
- Large size LCD with white backlight, clear display.
- Reading stable display mode and automatic lock display mode.
- DO8500 model：automatic salinity compensation, real time clock, timing storage, USB output.
- IP57 waterproof rating, equipped with carrying case.

Comparison between electrochemistry DO sensor and optical DO sensor

	Polarography or galvanic DO sensor	Optical DO sensor
Measurement	Consume oxygen in measurement – Unstable measurements.	Adopts Fluorescence technologies, no oxygen being consumed during test – stable measurements
Calibration	Serious electrode polarization , frequent calibration is needed; calibration time is long	No polarization; no need to calibrate frequently; only 2 minutes to calibrate.
Performance	Slow response, bad repeatability, low accuracy	15 seconds response time, good repeatability, high accuracy.
Lifetime	electrode membrane need to be frequently replaced; electrolyte need to be refilled; short life time.	No electrode membrane; no electrolyte; Service life>8000hours

Table 3 Portable Optical DO Meter Model Comparison

		DO850	**DO8500**
Model			
Parameter		DO/Temp	DO/Sal/Temp
DO	Range	(0-20.00) mg/L (ppm), (0-200.0) %	
	Resolution	0.01/0.1mg/L (ppm), 0.1/1% ,	
	Accuracy	±2% reading or±2% oxygen saturation, take the higher value; ±2% reading or ±0.2 mg/L, take the higher value	
	Temp compensation	0 to 100 ℃ (32 to212 ℉), automatic or manual	
	Response time	≤30s (25℃, 90% response)	
	Calibration point	Oxygen saturation & zero oxygen	
	Temperature compensation	Automatic, (0~50.0) ℃	
	Pressure compensation	Automatic, (60~120) kPa	
	Salinity compensation	Manual, (60~120) kPa	Automatic or manual , (60~120) kPa
Temp.	Range	(0~50.0) ℃	
	Resolution	0.1 ℃	
	Accuracy	±0.5℃	
Function	Display	LCD (white backlight)	
	Stable measuring indication	With ☺ icon	
	Automatic hold	Yes	Yes
	Date and time	No	Yes
	Data storage	No	500 sets
	Timing storage	No	Yes
	USB output	No	Yes
	IP rating	IP57 waterproof rating (float on water)	
Others	Power	AA battery x3 （1.5V×3）	
	Dimension/weight only meter	88×170×33mm/313g	
	Dimension/weight with case	360×270×76mm/1.5kg	360×270×76mm/1.6kg
	Product set	DO850 meter DO803 DO Sensor (3M cable) Calibration sleeve+carrying case	DO8500 meter DO803 DO sensor (3M cable) 2301-3M salinity electrode Calibration sleeve+carrying case Combination probe cap USB cable+software CD

DO850 kit   **DO8500 kit**

Portable pH meter for special application

PH8500-SS pH meter (Soft-Solid Food pH test)

Meter : PH8500
Electrode : LabSen753 3-in-1 pH electrode
Electrode feature: food grade stainless steel sheath, solid electrolyte, suitable for soft-solid food samples.
Application: cheese, bread, fruit, sushi rice, etc.

PH8500-BS pH meter (Meat pH test)

Meter : PH8500
Electrode : LabSen763 3-in-1 pH electrode
Electrode feature: food grade stainless steel sheath and blade, solid electrolyte, suitable for solid food samples.
Application: fresh meat and meat products.

PH8500-DP pH meter (Liquid Food pH test)

Meter : PH8500
Electrode : LabSen823 3-in-1 pH electrode
Electrode feature: Protelyte electrolyte prevents the junction from being blocked by reaction with protein.
Application: liquid food e.g. milk, yogurt, cream, sauce, jam.

PH8500-PW pH meter (Purified water pH test)

Meter : PH8500
Electrode : LabSen803 3-in-1 pH electrode
Electrode feature: movable sleeve junction, suitable for purified water and low ion concentration solution.
Application: drinking water, distilled water , RO water, deionized water, etc

PH8500-WW pH meter (Waste water pH test)

Meter : PH8500
Electrode : LabSen333 3-in-1 pH electrode
Electrode feature: non-diaphragm junction, solid electrolyte, hard to be contaminated and blocked.
Application: waste water, suspension, emulsion etc.

PH8500-SL pH meter (Soil pH test)

Meter : PH8500
Electrode : LabSen553 3-in-1 pH electrode
Electrode feature: PVC plastic housing, more rugged, spear sensor for direct soil test.
Application: soil (direct test, no slurry needed).

PH8500-MS pH meter (Micro volume measurement)

Meter : PH8500
Electrode: LabSen242-6 3-in-1 pH electrode
Electrode feature: dimension of the sensor is $\Phi6\times100mm$
Application: measurement for small volume samples (>0.2mL) and test in testing tubes.

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

Meter : PH8500
Electrode: LabSen831 pH Electrode and MP500 Temp. Electrode
Electrode feature: special HF glass membrane allows test in HF containing solutions for up to 1000 times (concentration<1%).
Application: solutions containing Hydro fluoride acid or other strong acids.

ORP electrode，conductivity electrode and temperature electrode

301Pt-C	Plastic ORP combination electrode	Dimension： $\Phi12\times160mm$, gel electrolyte, BNC connector, range: ±2000mV.
2310T-S	Plastic conductivity electrode	K=10 built-in 30kΩ thermistor, 4 pin connector, range: 20~200mS/cm.
DJS-0.1-S	Glass conductivity electrode	K=0.1 built-in 30kΩ thermistor, 4 pin connector, range: 0~200μS/cm.
MP500	Temperature electrode	$\Phi5$ stainless steel probe, range: -10~110℃, RCA connector, 30kΩ thermistor.

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