

## LabSen® 231 Professional Glass pH Electrode User Manual

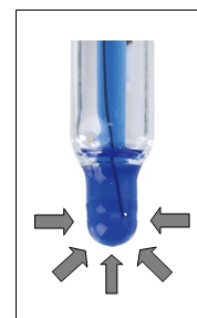
LabSen® electrochemical sensors are premium pH electrodes with Swiss sensor technology and key components. The LabSen® 231 pH electrode adopts a Polymer solid electrolyte and glass housing. It is designed for precise pH measurements in wastewater, emulsion, suspension, effluent, and other turbid water solutions.

### Suitable Applications for LabSen® 231

	Ideal	Appropriate
Regular water solutions: hydroponics, pools and spas, environmental monitoring, aquaculture, aquariums, education, general purpose lab test, body fluid, etc.		X
Turbid Water Solutions such as wastewater, effluent, and emulsions	X	
Titration	X	
Titration (non-aqueous)	X	
Drinking Water		X
TRIS Buffer	X	
Detergent	X	
Liquid Soap	X	
Salt Water	X	
Phosphate Buffers	X	
Paint (water-based)		X

This electrode has following features:

- Impact-resistant membrane (see the right picture), there is no danger of electrode breakage during normal use.
- Maintenance-free polymer electrolyte, non-diaphragm structure.
- Blue gel inner solution, does not flow and will not cause a bubble.
- Long life reference system, has better stability and service life.



### 1. Technical Data

Measuring Range	(0-14) pH	Electrolyte	Polymer
Temperature Range	(-5~80) °C	Soaking Solution	3M KCl
Shaft Material	Lead-free Glass	Electrode Dimension	(Φ12×120) mm
Membrane Shape	Half Ball	Connector	BNC

Reference	Long Life	Cable	Φ3×1m
Junction	2-pore		

## 2. Usage and Maintenance

- 2.1 Polymer reference electrode is a kind of high quality reference electrode with the feature of non-diaphragm, hard to be contaminated, resistant to compression and organic solution.
- 2.2 The connector of the electrode should be kept clean and dry. If contaminated, please clean it with medical cotton and absolute alcohol and blow dry to prevent the short circuit of the electrode and slow reaction of electrode.
- 2.3 The electrode measuring tip should be soaked in the soaking bottle containing storage solution to keep the membrane hydrated and junction unblocked. When measuring, please unscrew the bottle cap, pull out the electrode and rinse it with distilled or deionized water. After using, please put the electrode back into the bottle and screw tight the cap. Clean the bottle and replace the storage solution if the storage solution gets turbid and mildewed. The electrode should never be soaked in pure water or buffer solution for long.
- 2.4 After long time exposure in air, Polymer electrolyte will cause shrinkage. It will not happen in measurement status. The electrode must be soaked in 3M KCl solution for storage. After a long time soaking, there can be some white crystals dissolving out from 3M KCl solution, this is normal. Just simply rinse it off and keep using the electrode.
- 2.5 After 1-year of use, we recommend replacing the electrode to keep the best accuracy.

## 3. Limited Warranty

We warrant this instrument to be free from defects in material and workmanship and agree to repair or replace free of charge, at option of APERA INSTRUMENTS, LLC, any malfunctioned or damaged product attributable to responsibility of APERA INSTRUMENTS, LLC for a period SIX MONTHS from the delivery.

This limited warranty does NOT cover any damages due to:

Transportation, storage, improper use, failure to follow the product instructions or to perform any preventive maintenance, modifications, combination or use with any products, materials, processes, systems or other matter not provided or authorized in writing by us, unauthorized repair, normal wear and tear, or external causes such as accidents, abuse, or other actions or events beyond our reasonable control.

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