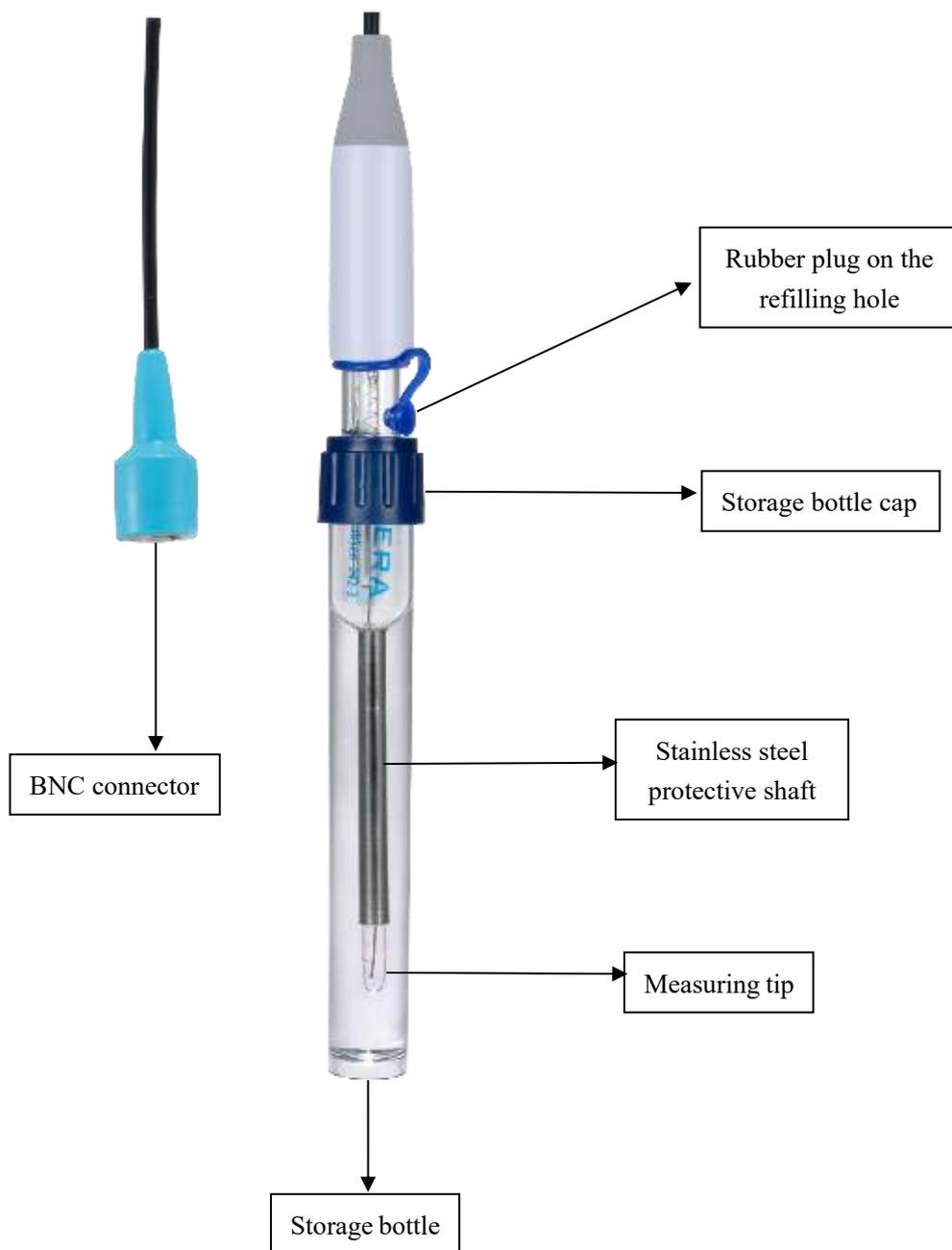


LabSen[®] 241-3SP Micro pH Electrode User Manual



LabSen® pH electrodes are made with proprietary sensor technologies and key components from Switzerland. LabSen® 241-3SP Micro pH electrode is designed for high-accuracy pH measurement of micro-volume samples containing proteins in small containers such as test tubes, microplates, cuvettes, and centrifuge tubes.

1. Features

- Unique LabSen® micro cylindrical sensor tip, designed for micro-volume pH measurement
- Smallest test sample volume is 15µL when you put your sample solution into Apera micro container (SKU: AI3301, sold separately)
- The protelyte solution prevents junction clogs from proteins, ideal for biochemical samples.
- The S membrane ensures low resistance for fast response
- The Long-life reference system significantly increases measuring stability and extends service life.
- The stainless-steel shaft protects the ultra-slim glass electrode from accidental damage.

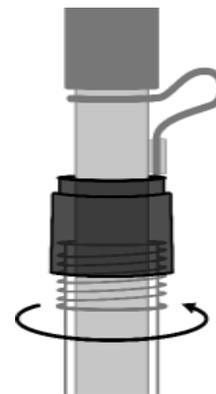


2. Technical Specifications

Measuring Range	0-14 pH	Reference Solution	Protelyte
Temperature Range	0~100°C	Soaking Solution	Protelyte
Membrane Type	S	Membrane Resistance	<450MΩ
Body Material	Lead-free Glass	Electrode Dimension	Entire body: (Φ12×130) mm Measuring end: (Φ3×16/Φ4×54) mm
Reference	Long Life	Connector	BNC
Junction	Ceramic	Cable	Φ3×1m

3. How to use

1. Insert the blue BNC connector of the electrode to the BNC socket of your pH meter while twisting clockwise until it's locked.
2. Before measuring, twist off the storage bottle cap (see graph on the right), pull out the electrode and rinse it off with distilled or deionized water.
3. Unplug the blue rubber plug to maintain a smooth electrolyte flow.
4. Perform at least a two-point calibration before measuring after connecting the new electrode to your pH meter.
5. The reference solution will run low as you use the electrode. Whenever the solution level falls to 1/2 height of the electrode, add Protelyte solution to the refilling hole (unplug the blue rubber plug) using a syringe or pipette.
6. After using, put the electrode back into the storage bottle and twist on the bottle cap.



4. Maintenance

1. When not in use, the electrode should be soaked in the storage bottle containing Protelyte solution to keep the glass membrane and junction in a healthy condition. Clean the bottle and replace the soaking solution if it gets contaminated. The electrode should never be stored in pure water such as deionized or distilled water.
2. The electrode is only as accurate as it is clean. Always thoroughly rinse off the probe before and after each measurement with pure water in a container or with a wash bottle.
3. The connector of the electrode should be kept clean and dry. If contaminated, please clean it with medical cotton and isopropyl alcohol and blow-dry it to prevent short circuit of the electrode or slow response of the electrode.
4. The electrode should avoid testing strong acid and strong alkali solutions, as well as dehydrating media such as absolute ethanol and concentrated sulfuric acid. If testing such solutions, the immersion time should be minimized and the electrode should be carefully cleaned after use.
5. Every pH electrode will eventually age and fail. The typical service life of Apera pH electrodes is 12-24 months depending on the frequency of usage and how well you keep it clean and properly stored. We recommend replacing your electrode every 12-18 months to ensure the best accuracy.

5. Limited Warranty

We warrant this electrode to be free from defects in material and workmanship and agrees to repair or replace free of charge, at option of APERA INSTRUMENTS (Europe) GmbH, any malfunctioned or damaged product attributable to responsibility of APERA INSTRUMENTS for a period of **six months**. Warranty period is the time limit to provide free service for the products purchased by customers, not the service life of the tester or electrodes.

This limited warranty does not cover any damages due to:

- I. transportation;
- II. storage;
- III. improper use;
- IV. failure to follow the product instructions or to perform any preventive maintenance;
- V. modifications;
- VI. combination or use with any products, materials, processes, systems or other matter not provided or authorized in writing by us;
- VII. unauthorized repair;
- VIII. normal wear and tear; or
- IX. external causes such as accidents, abuse, or other actions or events beyond our reasonable control.

APERA INSTRUMENTS (Europe) GmbH
Wilhelm-Muthmann-Str. 18
42329 Wuppertal Germany
Tel.: +49 202 51988998
Email: info@aperainst.de
www.aperainst.de