



LabSen® 241-180 pH Electrode User Manual

Apera Instruments LabSen® pH electrodes are built with proprietary sensor technologies and key components from Switzerland. LabSen 241-180 Micro pH electrode is designed for testing the pH level of micro samples ($\geq 50\mu\text{L}$) in small and deep containers such as NMR tubes.

Features

- Proprietary LabSen® micro cylindrical sensor tip (180mm), designed for micro-volume pH measurement in slim and deep containers.
- Blue gel inner solution - does not flow and will not cause air bubbles.
- Long life reference system with better stability and longer service life.
- The low membrane resistance increases response speed and measurement stability.

1. Technical Data

Range	0-14 pH	Electrolyte	3M KCL
Temperature Range	32 to 212°F (0 to 100°C)	Soaking Solution	3M KCL
Housing Material	Lead-free glass	Electrode Dimension	Electrode ($\Phi 12 \times 60$) mm Measuring Tip ($\Phi 3 \times 180$) mm
Reference	Long Life	Connector	BNC
Junction	Ceramic	Cable	$\Phi 3 \times 1\text{m}$
Membrane Resistance (@25°C)	<450 M Ω	Micro Sample Volume	$\geq 50 \mu\text{L}$

2. Usage and Maintenance

- 2.1. The measuring tip of electrode is only $\Phi 3\text{mm}$. **Please handle with care** in case of breakage.
- 2.2. Unplug the blue rubber plug before using to maintain the pressure of the reference solution, keeping consistent flow rate of reference solution and stable potentials of junction. After using, plug it back.
- 2.3. Before measuring, unscrew the bottle cap, pull out the electrode and rinse it with deionized water. After using, put the electrode back into the storage bottle and screw tight the cap. When not in use, the electrode should be soaked in the storage bottle containing 3M KCL soaking 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.
- 2.4. Perform at least a two-point calibration before measuring after connecting the new electrode to your pH meter.
- 2.5. The reference solution will run low as you use the electrode. Whenever the solution level falls to 1/2 height of the electrode, add 3M KCL solution to the refilling hole using a syringe or pipette.
- 2.6. After using, put the electrode back into the storage bottle, twist on the bottle cap, and plug in the refilling hole.
- 2.7. 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.
- 2.8. pH electrodes don't last forever. Every pH electrode will eventually age and fail even if you don't use it that often. 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 at least every 12-18 months to ensure the best accuracy.

Limited Warranty

How Long Does the Coverage Last?

Apera Instruments® (Apera) warrants the LabSen 241-180 pH Electrode (Product) for a period of 6 months from date of purchase by original purchaser or consumer. Proof of purchase is required for the warranty to be effective (store sales receipt for Product showing model number, payment and date of purchase). This warranty is non-transferable and terminates if the original purchaser/consumer sells or transfers the Product a third party.

What is Covered?

Apera warrants the Product against defects in material and workmanship when used in a normal manner, in accordance with Apera instruction manuals. If Apera is provided with valid proof of purchase (as defined above) and determines the Product is defective, Apera may, in its sole discretion either (a) repair the Product with new or refurbished parts, or (b) replace the Product with a new or refurbished Product.

What is NOT Covered?

This warranty does not apply to equipment, component or part that was not manufactured or sold by Apera, and shall be void if any such item is installed on a Product. Further, this warranty does not apply to replacement of items subject to normal use, wear and tear and expressly excludes:

- Cosmetic damage such as stains, scratches and dents
- Damage due to accident, improper use, negligence, careless operation or handling of Product not in accordance with Apera instruction manuals, or failure to maintain or care for Product as recommended by Apera
- Damage caused by use of parts not assembled/installed as per Apera instructions
- Damage caused by use of parts or accessories not produced or recommended by Apera
- Damage due to transportation or shipment of Product
- Product repaired or altered by parties other than Apera or its authorized agents
- Product with defaced, missing or illegible serial numbers
- Products not purchased from Apera or an Apera-authorized distributor or reseller.

How Do You Get Service?

To begin a warranty claim, have your valid proof of purchase ready and go to support.aperainst.com, or contact us at info@aperainst.com or 614-285-3080 to get an RMA number.

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