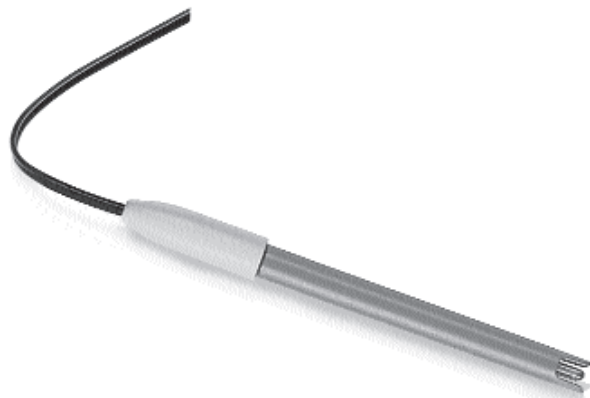


PHE-910

pH/ATC Ag/AgCl Combination Electrode



INSTRUCTION SHEET

M2892/1208

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Specifications

Range	0 - 14 pH
Isopotential Point	0 ± 30 mV
Temperature Range	0 to 100°C
Reference Element	Ag/AgCl Sealed cartridge
Junction	Free-Flow Platinum
Filling Solution	3M KCl saturated with AgCl
Storage Solution	3M KCl
Electrode Diameter	12mm
Body Length	120mm
Cable Length	1 meter
Connector Type	BNC and 2.5mm phone plug
Response Time	95% in 15 seconds
Sodium Error	<0.2 pH at pH 14 with 1M sodium

Electrode Preparation

1. Remove the wetting cap from the electrode.
2. Clean any salt deposits from the electrode body by rinsing with deionized (DI) or distilled water.
3. Verify that the Electrode Filling Solution is at least 1" (25mm) high. If not, slide the electrode Fill Gate up to uncover the Fill Hole. Insert the plastic nozzle of the fill solution bottle firmly into the fill hole and squeeze to fill the electrode.
4. Connect the electrode to the meter as described in the meter's manual.
5. During use leave the Fill Gate in the open position.

Measuring Techniques

- Standardize at least daily for the most accurate readings.
- Always use fresh buffers.
- Stir all buffers and samples.
- During standardization, allow time for the electrode to stabilize before entering the buffer into the meter.
- Rinse the electrode with DI water between samples.

Storage

Place the electrode in its Storage Vial containing Electrode Storage Solution. Electrode Fill Solution (3M KCl) can be purchased or made. Make 3M KCl solution by dissolving 22.37 grams of potassium chloride into 100 mL of DI or distilled water. Do NOT store the electrode in deionized water.

Troubleshooting

1. Connect the pH electrode to the BNC connector.
 2. Place the meter into absolute (*not* relative) mV mode.
 3. Rinse and place the clean electrode into a pH 7 buffer:
The mV reading should be 0 ± 15 mV.
Outside of this range indicates a problem.
See below for solutions.*
 4. Rinse and place the clean electrode into a pH 4 buffer:
The mV reading should be 159 to 186 mV more than value in pH 7.
Example: pH 7 buffer is 10 mV; pH 4 buffer should read 169 to 196 mV.
Outside of this range indicates a problem.
See below for solutions.*
 5. Optionally, rinse and place the clean electrode into a pH 10 buffer:
The mV reading should be -159 to -186 mV less than value in pH 7.
Example: pH 7 buffer is 10 mV; pH 10 buffer should read -149 to -176 mV.
Outside of this range indicates a problem.
See below for solutions.*
- * Ensure that buffers are fresh and not contaminated. If readings are still outside of this range, clean the electrode and repeat test.

Cleaning Procedures

If the electrode becomes sluggish, or has been determined to be bad, clean the electrode by following the directions below.

General

- Soak in 0.1M HCl or 0.1M HNO₃ for half an hour.
- Drain and refill the Electrode Filling Solution.
- Soak the electrode in Filling or Storage Solution for 1 hour.

Inorganic

- Soak in 0.1M tetrasodium EDTA solution 15 minutes.
- Drain and refill the Electrode Filling Solution.
- Soak the electrode in Filling or Storage Solution for 1 hour.

Protein

- Soak in 1% pepsin in 0.1M HCl for 15 minutes.
- Drain and refill the Electrode Filling Solution.
- Soak the electrode in Filling or Storage Solution for 1 hour.

Grease and Oil

- Rinse with mild detergent or methanol solution.
- Drain and refill the Electrode Filling Solution.
- Soak the electrode in Filling or Storage Solution for 1 hour.



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