pH Electrode Instruction Manual

1. Overview

The pH composite electrode is made of low-impedance sensitive glass film that can be applied to pH measurement under various conditions. With the characteristics of fast response, good thermal stability and reproducibility, it is less susceptible to hydrolysis, basically eliminating the alkali deviation. The pH electrode has a nearly linear behavior in the measuring range of pH 0 to 14. The reference system composed of Ag/AgCl and gel electrolyte salt bridge has a stable half-cell potential and excellent anti-pollution performance. Besides, the ring PTFE diaphragm is not easy to be blocked, which makes the device reliable even in long-term detection.

2. Specification

Measuring Range: 0-14pH

Applicable Temperature: 0-80℃

Drift: ≤0.02pH/24hours

Slope: ≥97%

Measurement Accuracy: ≤0.01PH

Response Time: 5sec

Sensitive Film Impedance: ≤$200 \times 10^6 \Omega$

Isoelectric Point of Electrode: 7±0.5pH

3. Use & Maintenance

1) The electrode must be calibrated with a standard buffer solution of known pH value before measurement. In order to improve the measurement accuracy, the pH value of the buffer solution should be reliable, and the closer its pH to pH of the measured object, the better, and generally the pH difference should not be over three pH.

2) The sensitive glass bulb at the front of the electrode should not be in contact with hard objects, any breakage or scratches will render the electrode useless.

3) The electrode socket must be kept highly clean and dry. If it's stained, please wipe it off with medical cotton and anhydrous alcohol and dry it before use. It is absolutely necessary to prevent th   output terminals from short-circuiting, otherwise, it will cause measuremen.   curacy or failure.

4) Before measuring, please shake   ubbles in the glass bulb to reduce measurement error. During mea   t, the electrode should be placed statically after stirring in the test s   accelerate the response.

5) The electrode should be cleaned   ionized water before and after the measurement to ensure the meas   ccuracy. When the measurement in the viscous sample is done, the e   needs to be washed with deionized water to remove the solvent.

6) The electrode will be passivate   r long-term use, which may cause a decrease in sensitivity gradient, .   response, and inaccurate measurements. At this time, soak the electrode bott n bulb with 0.1M HCl solution for 24 hours (Preparation of 0.1M dilute hydroch oric acid: Dilute 9ml hydrochloric acid with distilled water to 1000ml), and the soak it in 3M KCl solution for several hours to restore its performance.

7) If the glass bulb is contaminated or the liquid junction is blocked, the electrode will also be passivated. Please clean the electrode with an appropriate solution

according to the nature of the contaminant. See the table below for details (for reference).

Contaminant	Detergent
Inorganic metal oxides	Dilute hydrochloric acid less than 1M
Organic fats and oils	Dilute detergent (weak alkaline)
Resin polymer material	Dilute alcohol, acetone, ether
Protein blood cell pellets	Acid enzyme solution (such as pepsin, etc.)
Pigment substances	Dilute bleach, hydrogen peroxide

8) The electrode life cycle is about one year, and new electrodes should be replaced in time after aging.

4. Application

It is suitable for on-line monitoring of the pH value of various industrial and domestic sewage such as printing, circuit board factories, chromium-containing waste-water, etc.

5. Stripping

As shown in the figure below, be sure to strip off the semiconductor layer to avoid short circuits.

PH cable outer layer   Semiconductor layer   Insulation layer   Core(Indication)

pH

Ref

Shield layer lead wire

Copper shield layer(reference ratio)