

## pH Electrode Maintenance

During transport, tiny bubbles of air may form inside the pH sensitive bulb, in such conditions, the electrode cannot function correctly. To remove these bubbles, shake the electrode so that dispel the air bubble.

Whenever electrodes of the refillable type are used, the filling level of the electrolyte must be checked and topped up with the appropriate solution if necessary.

Whenever electrode of the refillable type is used, the sleeve which covers the filling hole must be lowered prior to the execution of the measurements and then replaced in its original position at the end of the measurement cycle.

If the protection cap has been without electrolyte, or if the electrode has not been used for a long time, the electrode must be reactivated by leaving it for several hours in a beaker containing normal tap water.

Generally speaking, the difference in mV between measurements taken in pH7 and pH4 buffer solutions ranges from 171mV to 176mV for pH electrodes working at temperatures of 20 °C -25 °C. If this value does not result, control the following points.

- 1) The cable used for the connection to the pHmeter must be intact and there should be no points of low insulation resistance anywhere between the two conductors connected to the measurement electrode and the reference electrode.
- 2) The connectors used for instrument connection must be perfectly clean and dry.
- 3) If the electrode has been laid for a long time with its bulb exposed to air, a process of dehydration takes place, and in such a case the results indicated by the electrode become extremely slow and apparently unstable. Immersed the electrode in distilled water, activate it for an entire night.

4) If incrustations of inorganic salt are found on the surface of the sensitive bulb, the efficiency of the electrode may be regained by immersing it for approximately five minutes in each of the following solutions: HCl 0.1M, NaOH 0.1M, and once again in HCl 0.1M.

5) A film of organic oil or grease may equally affect the measurements of the sensitive glass. To eliminate this, rinse the sensitive glass with a 75% methanol solution, dry with a soft cloth, wash the electrode well and immerse it for several hours in distilled water.

6) Protein deposits (due for example to measurements performed on milk, cheese, or meat samples) may be eliminated by treatment in pepsin and hydrochloric solution. This solution must be prepared immediately before use. Leave the electrode immersed for several hours in pepsin and hydrochloric solution, then thoroughly rinse with water, to be followed by an immersion of several hours in distilled water.

To preserve the characteristics of the electrodes unaltered (in particular, the velocity of measurement) they must always remain moistened. For brief periods of time, tap water may be used as a substitute for this purpose. The protective cap of the electrode is an ideal chamber for long-term conservation.

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## Warranty

These instruments are warranted from all defects in material and manufacturing for a period of one year from the date of purchase. If during this period, the repair or the replacement of parts is required where the damage is not due to negligence or erroneous operation by user, please return the parts to either dealer or our offices, and the repair will be effected free of charge.

## Portable pH meter

REF - KDD010

**Nahita**



KDD010 pH Meter is very easy to use, but we advise you to read the instructions manual attentively before using the instrument.

## Technical Specifications

### 1. Measuring Range:

pH:0.00 ~ 14.00pH; mV:0 ~ ±1999mV; Temp:0 ~ 100

### 2. Accuracy:

pH: ±0.01pH; mV: ±0.1% F-S ± 1digit; Temp: ± 0.4

### 3. Resolution:

pH:0.01pH; mV:1.0mV; Temp:0.1

### 4. Display: 4-digital LCD

### 5. Power Supply: 1x 9V Battery

### 6. Operating Conditions:

Temperature: 0°C – 50°C, Humidity: ≤ 95 %

### 7. Input Impedance: 10<sup>12</sup>Ω

### 8. Dimensions: 123mm x 72mm x 33mm

### 9. Weight: 238g

### 10. Calibration:

a) When single-point calibration, carries on in the neutral buffer solution.

b) When double-point calibration, carries on in the neutral buffer solution and the acid (or alkalinity) buffer solution

c) Slope: from 85 to 105%

### 11. Temperature Compensation:

a) Automatic temperature compensation with temperature electrode

b) When the probe is turned off the temperature is fixed at 20 and maybe modified with the use of the internal trimmer.

## General Description

- The KDD010 pH meter has been specially designed for the maximum facility of use.

- The handy keyboard for the selection of the various functions. The possibility of automatically correcting errors in measurement due to temperature and the extreme simplicity of regulation all serve to permit a rapid and reliable execution of calibration and measurement.

- The display on the front panel reveals the temperature or pH or mV readings taken by the instrument. The instrument with a pH electrode and a temperature electrode.

## Front Panel Description

Here is a brief description of the functions performed by each of the key present on the keyboard.

**ON/OFF:** This is used for switching the instrument On and Off.

**pH:** This indicates on the display panel the pH value by the electrode.

**mV:** This indicates on the display panel the mV value by the electrode.

**°C:** This indicates on the display panel the temperature value by the electrode. This is the value used by the circuit for the pH measurement compensation.

At the bottom of the instrument, there are two trimmers are found for the regulation of the instrument.

## Electrode Connection and Battery Installation

### The pH Electrode:

This is connected to the jack of the pH meter.

### The Temperature Electrode:

This is connected to the jack on the right of the instrument.

### Battery Installation:

Open the cap of battery on the back of the instrument and instead of the old battery with new battery. Attention to the polarity of battery.

## pH Calibration

1) Pour a small quantity of pH6.86 and pH4.01 (or pH9.18) solution into two each clean beaker.

2) For a particularly accurate calibration, it is advised to use two beakers for each buffer solution; the first is to be used for rinsing the electrode, the second is to be used for the calibration. In this way, the risks of contaminating the buffer solution are reduced to a minimum.

3) Switch on the instrument.

4) Press the pH key to display the pH measurement.

5) Immerse the electrode in a pH6.86 buffer solution, and gently shake it.

6) Allow the reading to stabilize and with a small screwdriver turn the calibration trimmer at the bottom of the instrument until the display shows is corresponding the calibration solution. Rinse the electrode with distilled water.

7) Immerse the electrode in a pH 4.01 or pH 9.18 buffer solution, and gently shake it.

8) After about one minute, with a small screwdriver turn the calibration trimmer at the bottom of the instrument regulate the trimmer found in the right position until display shows "4.01" or "9.18".

9) The calibration of the instrument's pH range is now complete.

**Important!** The instrument's pH range must be re-calibrated whenever:

- The electrode has been used (laid) for long time from the last calibration.
- The electrode has been used in particularly taxing conditions.
- The utmost accuracy is required.
- Replace the new electrode.