



# Pro pH meter with probe and standards

**Cat # G2P-PROPH09**

**Pack Size: 1 Unit**

## Introduction

Gene to Protein Pvt. Ltd. is proud to offer a high-quality pH meter for measuring the acidity or alkalinity of a solution. The pH meter is designed to provide precise and accurate readings on the pH scale, which ranges from 0 to 14 with 7 being neutral. A solution with a pH less than 7 is considered acidic, while a solution with a pH greater than 7 is considered alkaline. This device is essential for a variety of industries and applications, including agriculture, biology, chemistry, food science, and water treatment. Our pH meter works by measuring the difference in electric potential between a reference electrode and a pH-sensitive electrode that is immersed in the solution being tested. With Gene to Protein Pvt. Ltd.'s pH meter, you can be sure that you're getting an accurate measurement of the solution's pH, which is crucial for many processes and reactions.



## Principle of Operation

The principle of operation of our pH meters is based on the electrical potential that develops across a pH glass electrode when it is immersed in a solution. The pH glass electrode contains a hydrogen ion-sensitive element that changes its membrane potential as the hydrogen ion concentration of the solution being tested varies. This potential is measured by a high impedance voltmeter and compared to that of a reference electrode, providing a precise and accurate measurement of the solution's pH. The measurement is expressed on the pH scale, which ranges from 0 to 14, with 7 being neutral. A solution with a pH less than 7 is considered acidic, while a solution with a pH greater than 7 is considered alkaline. The pH value is calculated using the formula:

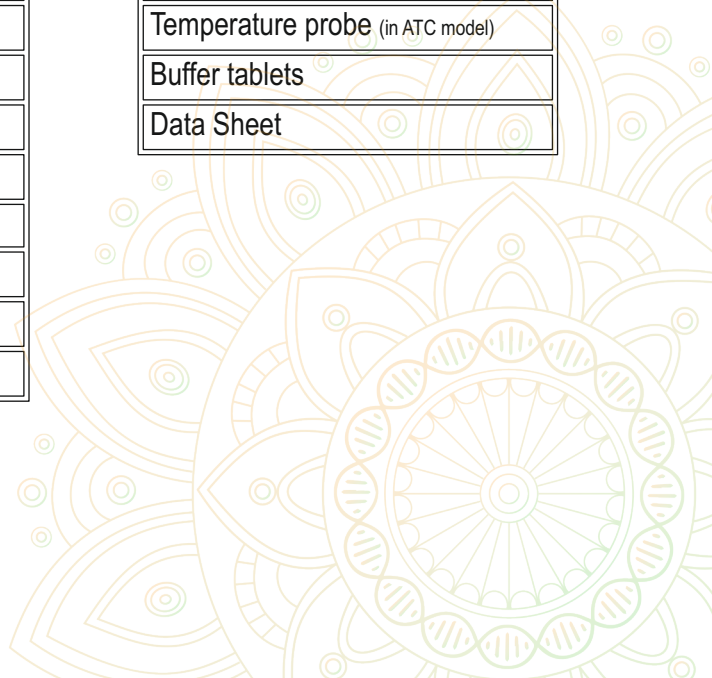
$$\text{pH} = -\log_{10}[\text{H}^+], \text{ where } [\text{H}^+] \text{ is the hydrogen ion concentration.}$$

## Technical details

Specification	Details
pH	0-14 pH
mV	0 ± 1999mV
Resolution	0.01pH;1mV
Accuracy	pH: ± 0.01; mV ± 1mV
Input Impedence	>10 <sup>3</sup> ohms
Power Supply	220 to 230V, 50-60 Hz
Maximum Power Consumption	60W
Working temperature	10-25°C
Weight	1.5 Kg
Slope Correction	80-12%

## Standard Accessories

Accessories
Combination pH electrode
Electrode stand and clamp
Temperature probe (in ATC model)
Buffer tablets
Data Sheet



## Control and Services

### Front Panel Controls

**Slope Control:** This control adjusts the gain from 180% to 120% to compensate for deviations in electrode output from the standard. It facilitates calibration with the second buffer solution.

**Digital Display:** The A3<sup>12</sup> digital display has a reading capacity of up to  $\pm 1999$ . In pH mode, the decimal point is automatically displayed, and a negative (-) indicator appears when negative millivolts are inputted in mV mode.

**Calibrate Control:** This control sets the digital readout to the value of the calibration buffer used, and operates in both pH and mV modes.

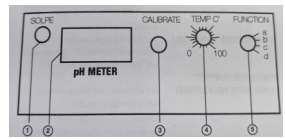
**Temperature (Manual):** This control compensates for the slope-versus-temperature characteristics of electrodes, and is only active in the pH mode.

**Functional Control(A) ATC (Auto temperature Compensation):** In this mode, the instrument measures pH with automatic temperature compensation. The temperature probe must be immersed in the solution being tested during measurement. Temperature °C (Manual) has no effect in ATC mode

**pH:** The instrument measures directly in pH units. The Temperature °C (Manual) control should be set to the solution temperature during measurement.

**Stand By:** In this position, the instrument will indicate 000±1.

**mV:** In this mode, the instrument measures directly in millivolts from -1999 mV to  $\pm 1999$  mV.



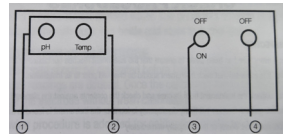
### Back Panel Controls

**Input socket for temp.** This input socket accommodates the combined electrode with a BNC connector, which houses both the glass and reference leads of the electrode.

**Input socket for temp. Probe (in atc model).** This BSM Mike connector socket accepts the temperature probe that comes with the instrument. The two-position switch is used to turn the instrument on and off. The instrument should be turned off when not in use. A 100 mA fuse regulates the current flow from the power supply to the instrument.

**On/Off:** This two-position switch turns the instrument on and off. The instrument should be turned off when not in use.

**Fuse(100ma):** The 100mA fuse is used to control the current from the power supply.



## Operation

Although we have taken every precaution to ensure that the instrument arrives to you in good condition, it is important to inspect the instrument before using it. Please carefully unpack the instrument from its case and compare the contents with the standard accessories listed in section 1.3. If any discrepancies are found or the instrument appears damaged, please notify the dealer or the company immediately.

### Connecting the Electrode:

- Set up the electrode stand and place the pH electrode into it.
- Carefully remove the protective rubber cap from the filling hole of the electrode. The level of KCl solution should be a few millimeters below the hole. If needed, refill with saturated KCl solution and replace the rubber cap.

### Preparation of Buffer Solutions:

Dissolve one buffer tablet in 100ml distilled water. The resulting solution should have a pH respective pH mentioned ie. pH 4,7,9.2. Store the buffer solution in a clean bottle in a cool place.

### Calibration of Electrode:

- Connect the combination pH electrode to the input socket of the instrument. Rinse the electrode with distilled water and turn the instrument on.
- Set the temperature control of the instrument to match the temperature of the new buffer solution.
- Immerse the electrode in the 4 pH buffer solution and set the right nob to mV
- Set the mV to 177 using the middle nob
- Set the pH to 4 using the left nob
- Move the Function Selector Switch to "STAND BY".
- Rinse the electrode with distilled water . Immerse the electrode in the 9.2 pH buffer solution. Set the pH to 9.2 using the middle nob

