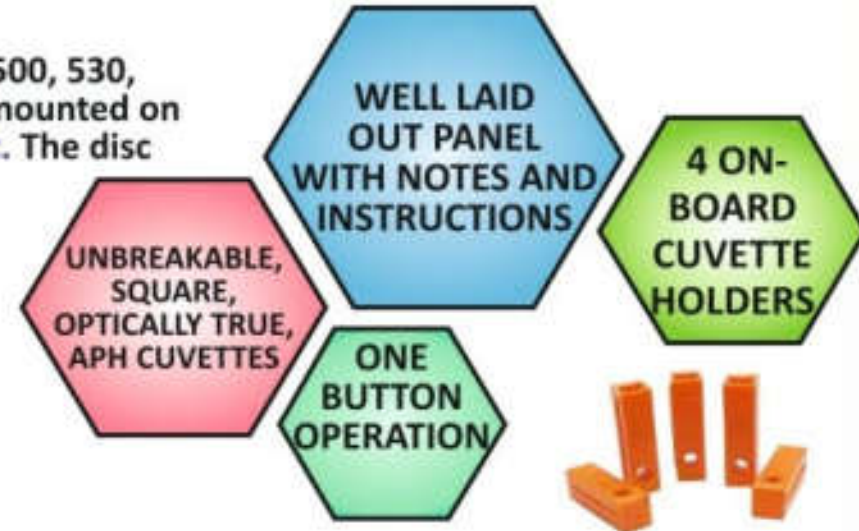


# MODEL EQ-650A

Disc Mounted Filters, Reads %T & OD, square cuvette

Useful for U.G., P.G., Pathology, Colleges

- Function** : % T & OD  
**Filters** : Disc mounted German filters 400, 420, 470, 500, 530, 620, 660, & 700 nm. All the eight filters are mounted on the disc. Selection is done by rotation of disc. The disc will be locked in desired position  
**Readout Measurement** : 3 digit LED display  
A) %T - 0-100%  
B) OD - 0-1.99  
**Accuracy** : %T -  $\pm 1\%$  - OD -  $\pm 0.01$   
**Light source** : LED of infinite life  
**Detector** : Photo cell  
**Cuvette** : Square APH cuvette with 10 mm path length Optiglass window  
**Power required:** 230 V AC  $\pm 10\%$  50 Hz, 10 VA  
**Warning time** : 5 minutes  
**Weight** : 1 Kg. (Approx)  
**Body** : NANO CRYSTALLINE ABS™  
**Dimension** : 90 mm(H) x 225 mm(W) x 220 mm(L)  
**Sample quantity** : 1ml  
**Accessories** : Square cuvette, Dust proof cover



## **STANDARD OPERATING PROCEDURE FOR COLORIMETER**

1. Switch ON the instrument.
2. Switch on the instrument at least 10 minutes before use and to allow it to stabilize.
3. Move the filter wheel and select the desired wavelength (Range 400nm-700nm).
4. Place the mode selector at %T and adjust the transmittance to 100 using ADJUST 100% knob.
5. Press the mode selector again and switch to absorbance mode.
6. Adjust absorbance to 0 using the knob.
7. Fill the cuvette with distilled water or a solution used as a blank.
8. Clean the outer surface of the cuvette using filter paper.
9. Insert the cuvette filled with a blank solution in the colorimeter.
10. Adjust the absorbance to 0 using knob.
11. Remove the cuvette and place it in cuvette holder.
12. Fill the cuvette with the sample solution.
13. Clean the outer surface using filter paper.
14. Insert the cuvette filled with a test sample in colorimeter and record the results.
15. After obtaining results, discard the cuvettes containing blank and sample solutions and rinse with water.
16. Switch off the power button after use.

# DIGITAL COLORIMETER

With improved design you will find the same reading each time you insert the cuvette

## Introduction :

The Photo-electric Colorimeters model EQ-650, EQ-650A, EQ-651A and EQ-653 are electronic controlled colorimeters. The instruments are highly sensitive and employs C-Mos technology for accurate performance. It is designed for simple operation with durable functioning and permits speedy and accurate measurement in routine analysis.

## MODEL EQ-650

Separate Filters, Reads %T & OD, square cuvette

Useful for U.G., P.G., Pathology, Colleges

|                 |   |
|-----------------|---|
| Function        | : % T & OD  |
| Filters         | : Separate German filters 400, 420, 470, 500, 530, 620, 660, & 700 nm |
| Readout         | : 3 digit LED display   |
| Measurement     | : a) %T - 0-100%<br>b) OD - 0-1.99                                    |
| Accuracy        | : %T - $\pm 1\%$ - OD - $\pm 0.01$                                    |
| Light source    | : LED of infinite life  |
| Detector        | : Photo cell  |
| Cuvette         | : Square APH cuvette 10 mm path length optiglass window               |
| Power required  | : 230 V AC $\pm 10\%$ 50 Hz, 10 VA                                    |
| Warning time    | : 5 minutes   |
| Weight          | : 1 Kg. (Approx)  |
| Body            | : NANO CRYSTALLINE ABS™   |
| Dimension       | : 90 mm(H) x 225 mm(W) x 220 mm(L)                                    |
| Sample quantity | : 1ml   |
| Accessories     | : Square cuvette, Dust proof cover                                    |

UNBREAKABLE,  
SQUARE,  
OPTICALLY TRUE,  
APH CUVETTES

WELL LAID  
OUT PANEL  
WITH NOTES AND  
INSTRUCTIONS

ONE  
BUTTON  
OPERATION



## **STANDARD OPERATING PROCEDURE FOR COLORIMETER**

1. Switch ON the instrument.
2. Switch on the instrument at least 10 minutes before use and to allow it to stabilize.
3. Move the filter wheel and select the desired wavelength (Range 400nm-700nm).
4. Place the mode selector at %T and adjust the transmittance to 100 using ADJUST 100% knob.
5. Press the mode selector again and switch to absorbance mode.
6. Adjust absorbance to 0 using the knob.
7. Fill the cuvette with distilled water or a solution used as a blank.
8. Clean the outer surface of the cuvette using filter paper.
9. Insert the cuvette filled with a blank solution in the colorimeter.
10. Adjust the absorbance to 0 using knob.
11. Remove the cuvette and place it in cuvette holder.
12. Fill the cuvette with the sample solution.
13. Clean the outer surface using filter paper.
14. Insert the cuvette filled with a test sample in colorimeter and record the results.
15. After obtaining results, discard the cuvettes containing blank and sample solutions and rinse with water.
16. Switch off the power button after use.

# DIGITAL COLORIMETER

**MODEL EQ-652**

One button press micro controller based colorimeter with Square cuvette

Useful for U.G., Research, Pathology

Obtain readings at the press of button, the analysis have never been so speedy.

We are sure, after using it, you will find all other models and all other brands to be out dated

**Introduction :** EQ-652 is  $\mu$ controller based, digital colorimeter with Sharp inbuilt filters for pathological labs. There are no moving parts, all the operations are based on feather-touch switch. It reads '%T' mode or Absorption Mode (O.D.). **One Touch Calibration.**

The instrument is highly sensitive and employs C-MOS technology for accurate performance. It is designed for simple operations with durable functioning and permits speedy and accurate measurement in routine analysis. There are 10 inbuilt filters. More over it has in-built test tube stand. Zero adjustment is internally done by micro controller.

|                        |   |
|------------------------|---|
| <b>Function</b>        | : % T & OD  |
| <b>Filters</b>         | : <b>Inbuilt filters</b> , GaN based.<br>400, 420, 470, 500, 530, 560, 590, 620, 660, & 700 nm.<br>Selection is done using soft touch keys. |
| <b>Readout</b>         | : 3 digit LED display for %T & OD<br>3 digit LED display for Wavelength   |
| <b>Measurement</b>     | : %T - 0-100%                      OD - 0-1.99  |
| <b>Accuracy</b>        | : %T - $\pm 1\%$ OD - $\pm 0.01$  |
| <b>Light source</b>    | : LED of infinite life  |
| <b>Detector</b>        | : Photo cell  |
| <b>Cuvette</b>         | : Square APH cuvette 10 mm path length optiglass window   |
| <b>Power required</b>  | : 230 V AC $\pm 10\%$ 50 Hz, 10 VA  |
| <b>Warning time</b>    | : 5 minutes   |
| <b>Weight</b>          | : 1 Kg. (Approx)  |
| <b>Body</b>            | : <b>NANO CRYSTALLINE ABS™</b>  |
| <b>Dimension</b>       | : 90 mm(H) x 225 mm(W) x 220 mm(L)  |
| <b>Sample quantity</b> | : 2ml   |
| <b>Accessories</b>     | : Square cuvette, Dust proof cover  |



To over come defects in test tube cuvette, we have developed square cuvette made from Alpha poly-hydrocyanide material with following features.

- Low volume
- Can with stand any solvent, acid and base
- Unbreakable square cuvette 10 mm path length
- Optical glass window all the cuvettes are matched
- No rotation effect, fits in same position
- Same reading each time with all the cuvettes

COLORIMETER

## **STANDARD OPERATING PROCEDURE FOR COLORIMETER**

1. Switch ON the instrument.
2. Switch on the instrument at least 10 minutes before use and to allow it to stabilize.
3. Move the filter wheel and select the desired wavelength (Range 400nm-700nm).
4. Place the mode selector at %T and adjust the transmittance to 100 using ADJUST 100% knob.
5. Press the mode selector again and switch to absorbance mode.
6. Adjust absorbance to 0 using the knob.
7. Fill the cuvette with distilled water or a solution used as a blank.
8. Clean the outer surface of the cuvette using filter paper.
9. Insert the cuvette filled with a blank solution in the colorimeter.
10. Adjust the absorbance to 0 using knob.
11. Remove the cuvette and place it in cuvette holder.
12. Fill the cuvette with the sample solution.
13. Clean the outer surface using filter paper.
14. Insert the cuvette filled with a test sample in colorimeter and record the results.
15. After obtaining results, discard the cuvettes containing blank and sample solutions and rinse with water.
16. Switch off the power button after use.

# MODEL EQ-660B

Microprocessor based with built-in std. conductance & unbreakable stand

Useful for U.G., P.G., Research & Industry

DIGITAL  
BAND  
SWITCH

DIP  
AND  
READ

WELL LAID  
OUT PANEL  
WITH NOTES &  
INSTRUCTIONS

ALL  
FEATHER  
TOUCH  
CONTROLS

|                |  |
|----------------|--|
| Readout        | : 4 digit LED display  |
| Unit of meas.  | : MHO (SIEMENS)  |
| Range          | : 0.001 $\mu$ S to 200mS<br>in 6 ranges  |
| Six ranges     | : 200mS, 20mS, 2mS,<br>200 $\mu$ S, 20 $\mu$ S, 2 $\mu$ S                      |
| Accuracy       | : $\pm 1\% \pm$ last 1 digits  |
| Power required | : 230 V AC $\pm 10\%$ @ 50 Hz, 5 VA  |
| Warming period | : 5 minutes  |
| Weight         | : 1Kg (approx.)  |
| Body           | : NANO CRYSTALLINE ABS™  |
| Dimension      | : 80 mm (H) x 235 mm (W) x 155 mm (L)  |
| Standard cond. | : Conductance of 1.000 m $\bar{O}$   |
| Electrode      | : EQ-708A Unbreakable APH Sleeved, Platinized Platinum Conductivity Cell (K=1) |
| Accessories    | : Stand set, Screwdriver and Dust proof cover                                  |
| Technology     | : Quantum Zuerkst Certified  |



## **STANDARD OPERATING PROCEDURE FOR CONDUCTIVITY METER**

1. Switch on the main supply and press the N button of the conductivity meter to switch on the meter and switch off the meter.
2. For automatic temperature compensation (ATC). Simply attach the conductivity/TDS electrode to the meter ensure that the ATC mode has been selected in the setup menu The ATC indicator will light on the LCD.
3. Note: If the conductivity/ TDS electrode is not properly attached to the meter or it has been damaged, the ATC indicator will blink and the temperature display will show “Ur ”.
4. Rinse the electrode with de-ionized or distilled water before use to remove any impurities adhering to the electrode body. Shake or air dry. To avoid contamination or dilution of your sample rinse the electrode with the small volume of your sample.
5. Press ON to switch on the meter.
6. Dip the electrode into the sample.
7. When dipping the electrode into the sample, take care to ensure that the liquid level is above its upper steel band. Stir the electrode gently in the sample to create a homogeneous sample.
8. Allow time for the reading to stabilize. Note the reading on the display.



# DIGITAL CONDUCTIVITY METER (EC METER)

**MODEL EQ-664A**

**AUTO RANGING CONDUCTIVITY METER** with inbuilt magnetic stirrer & standard conductance (useful for titration) Selects the right working range

Useful for Under Graduate, Post Graduate, Industry, Titration etc.

|                |   |
|----------------|---|
| Readout        | : 4 digit LED display   |
| Unit of meas.  | : SIEMENS (MHO)   |
| Range          | : 0.001 $\mu$ S to 200 mS in six auto ranges                                  |
| Six ranges     | : 200 mS, 20mS, 2mS, 200 $\mu$ S, 20 $\mu$ S, 2 $\mu$ S                       |
| Accuracy       | : $\pm 1\% \pm$ last 1 digits   |
| Power required | : 230 V AC $\pm 10\%$ @50 Hz, 6 VA  |
| Weight         | : 1 Kg. (Approx.)   |
| Body           | : <b>NANO CRYSTALLINE ABS</b> <sup>TM</sup>                                   |
| Warming period | : 5 minutes   |
| Dimension      | : 90 mm (H) x 225 mm (W) x 220 mm (L)   |
| Standard cond. | : Conductance of 1.000 mS   |
| Electrode      | : EQ-708A Unbreakable APH Sleeved Conductivity Cell (K=1) Platinized Platinum |
| Stirrer speed  | : 500 RPM Fixed   |
| Accessories    | : Teflon magnet, Electrode clamp, Rod, Screwdriver, and Dust proof cover      |
| Technology     | : <b>Quantum Zuerkst Certified</b>  |

AUTO  
RANGING.  
DIP &  
READ.



CONDUCTIVITY (EC) METER

# **STANDARD OPERATING PROCEDURE FOR CONDUCTIVITY METER**

1. Switch on the main supply and press the N button of the conductivity meter to switch on the meter and switch off the meter.
2. For automatic temperature compensation (ATC). Simply attach the conductivity/TDS electrode to the meter ensure that the ATC mode has been selected in the setup menu The ATC indicator will light on the LCD.
3. Note: If the conductivity/ TDS electrode is not properly attached to the meter or it has been damaged, the ATC indicator will blink and the temperature display will show “Ur ”.
4. Rinse the electrode with de-ionized or distilled water before use to remove any impurities adhering to the electrode body. Shake or air dry. To avoid contamination or dilution of your sample rinse the electrode with the small volume of your sample.
5. Press ON to switch on the meter.
6. Dip the electrode into the sample.
7. When dipping the electrode into the sample, take care to ensure that the liquid level is above its upper steel band. Stir the electrode gently in the sample to create a homogeneous sample.
8. Allow time for the reading to stabilize. Note the reading on the display.

## LABORATORY CONDUCTIVITY METER



**MODEL: TL-300EC**

### DESCRIPTION

TOPLAB INDIA'S microprocessor based Laboratory Conductivity meter is used for measuring the Conductivity of liquids. The meter is widely used in environmental and ecological studies for monitoring the purity and concentration of water. Calibration is fast, easy and accurate with auto-calibration using built-in Auto buffer -recognition and automatically calculated and displayed electrode slope value, with dual selective Temperature Compensation of ATC & MTC.

TOPLAB INDIA'S EC Meter is a great tool for any laboratory operator and field user, which is one of the most accurate digital EC / °C meters available in the market. It has the function of ATC (Automatic Temperature Compensation) and MTC (Manual Temperature Compensation), and is suitable to measure the EC & Temperature value of solutions.

## EC Meter

### Features:

- Large backlit LCD display shows mode indicators and help messages.
- Up to 3-point calibration allows user to customized calibration solutions.
- Auto-Ranging for Conductivity and Temperature measurements.
- Selectable cell constants and temperature units.
- Automatic Temperature Compensation ensures highly accurate measurement.
- Automatic endpoint function freezes the stable measured values for easy reading and recording data.
- Manual temperature calibration provides accurate temperature value.
- Help message as operational guide to helps you understand how to use meter.
- Setup menu lets user customizes calibration points, temperature units, automatic or manual hold function, and auto-off feature to meet personal preferences.
- Reset function can resumes all settings to factory default parameters.

### SPECIFICATION:

- A. **Conductivity Range:** 0  $\mu\text{S}/\text{cm}$  ~ 200  $\text{mS}/\text{cm}$ ;  
[0~199.9] $\mu\text{S}/\text{cm}$ ; 200~1999 $\mu\text{S}/\text{cm}$ ; (2~19.99) $\text{mS}/\text{cm}$ ; (20~199.9) $\text{mS}/\text{cm}$
- B. **Resolution:** 0.1/ $1\mu\text{S}/\text{cm}$ ; 0.01/0.1 $\text{ms}/\text{cm}$
- C. **Conductivity Accuracy:**  $\pm 1\%$  Full
- D. **Calibration Points:** Up to 3 points
- E. **Cal. solutions:** 10 $\mu\text{S}/\text{cm}$ , 84 $\mu\text{S}/\text{cm}$ , 1413 $\mu\text{S}/\text{cm}$ , 12.88 $\text{mS}/\text{cm}$ , 111.8 $\text{mS}/\text{cm}$
- F. **Temperature Range:** 0~105°C, 32~221°F
- G. **Temperature Accuracy:**  $\pm 1^\circ\text{C}$
- H. **Temperature Compensation:** 0~100°C, 32~212°F, Manual
- I. **Temperature Coefficient:** 0.0~10.0% per °C
- J. **Cell Constant:** K=0.1, 1, 10, Selectable
- K. **Normalization Temperature:** 25°C
- L. **Auto-Off:** Manual or Automatic
- M. **Connector:** 6-pin DIN
- N. **Power Requirements:** DC9V, using AC adapters ( 220VAC/50Hz)

# STANDARD OPERATING PROCEDURE FOR CONDUCTIVITY METER

1. Switch on the main supply and press the N button of the conductivity meter to switch on the meter and switch off the meter.
2. For automatic temperature compensation (ATC). Simply attach the conductivity/TDS electrode to the meter ensure that the ATC mode has been selected in the setup menu The ATC indicator will light on the LCD.
3. Note: If the conductivity/ TDS electrode is not properly attached to the meter or it has been damaged, the ATC indicator will blink and the temperature display will show “Ur ”.
4. Rinse the electrode with de-ionized or distilled water before use to remove any impurities adhering to the electrode body. Shake or air dry. To avoid contamination or dilution of your sample rinse the electrode with the small volume of your sample.
5. Press ON to switch on the meter.
6. Dip the electrode into the sample.
7. When dipping the electrode into the sample, take care to ensure that the liquid level is above its upper steel band. Stir the electrode gently in the sample to create a homogeneous sample.
8. Allow time for the reading to stabilize. Note the reading on the display.

# DIGITAL MELTING/SOFTENING & BOILING POINT APPARATUS

**MODEL EQ-730**

Microprocessor based 0 - 300°C ± 0.1°, slow rate 1°/min

Useful for U.G & P.G., Research, Industry, Pharma

## FEATURES

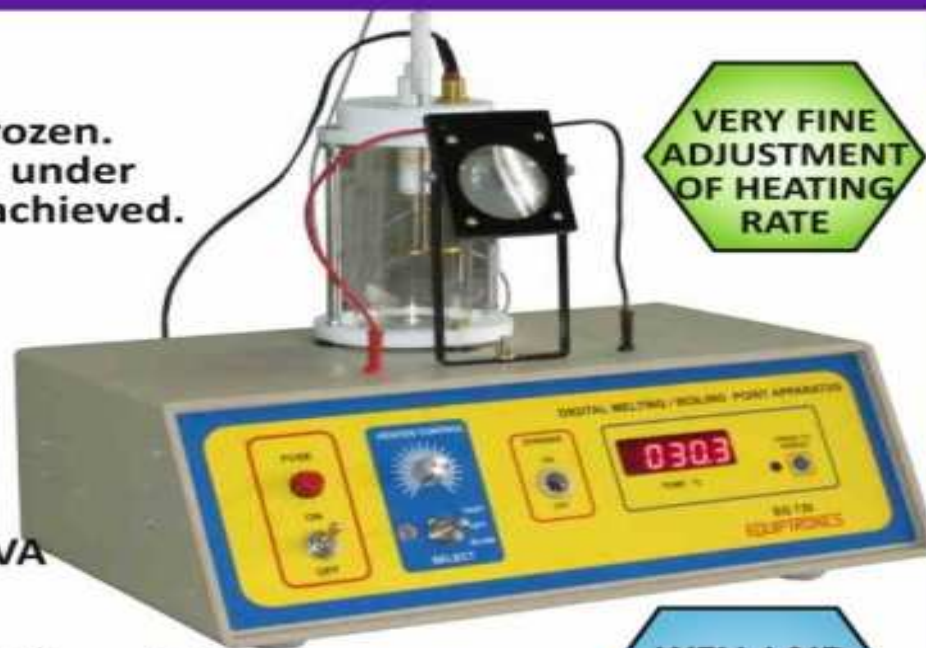
The instrument is microprocessor based.

On pressing the button the temp reading gets frozen.

Thus User can concentrate freely on the sample under

Test. Heating rate as low as 1°C/minute can be achieved.

- Heating Range** : Room temperature to 300°C
  - Readout** : 4 Digit for Temperature
  - Resolution** : ± 0.1°C
  - Heating Rate** : 1°/min to 20°/min
  - Power** : 230V AC Mains @50 Hz, 500VA
  - Temp. Sensor** : Unbreakable Teflon probe
  - Weight** : 3 Kg Approximately
  - Dimensions** : 360 mm (L) x 200 mm (B) x 150 mm (H)
  - Body** : **NANO CRYSTALLINE ABS™**.
  - Stirrer** : Shock & Rust proof body.
  - Sample Viewing** : Magnetic stirrer for uniform heating.  
: 50 mm Magnifying Lens with inbuilt illumination
- Simultaneous measurement for upto 5 samples**



VERY FINE  
ADJUSTMENT  
OF HEATING  
RATE

WELL LAID  
OUT PANEL  
WITH NOTES &  
INSTRUCTIONS

## **STANDARD OPERATING PROCEDURE FOR CALIBRATION OF DIGITAL MELTING POINT APPARATUS**

1. Switch “ON” the main switch.
2. Fill powder to be tested in capillary tube.
3. Insert the capillary tube through one of the small hole in the Teflon cover of the beaker. Two more capillaries with the powder to be tested can be used at same time.
4. Switch “ON” instrument by press “ON/OFF” switch. Indicator will display the actual bath temperature.
5. Switch “ON” the back ground light and adjust the light intensity as per your sight so that capillaries are clearly visible.
6. Switch “ON” the heater by heater controller knob and adjust the heating rate as required.
7. Adjust stirrer speed with the help of Stirrer Speed knob so that it rotates smoothly.
8. Watch the tips of capillaries containing the samples under test at the exact stage, when the desired sample melts, note the reading in oC at which sample melt form the digital display of the apparatus.
9. Switch “OFF” the digital melting point apparatus after completion of the test by pressing “ON/OFF” switch.

# Standard Operating Procedures (SoP's)



## Product Specification

|                             |                                   |
|-----------------------------|-----------------------------------|
| Usage/Application           | Laboratory                        |
| Brand                       | Wensar                            |
| Model Name/Number           | PGB 205                           |
| Capacity                    | 200g                              |
| Accuracy                    | 1mg(0.001g)                       |
| Pan Size                    | 80mm                              |
| Display Type                | LCD Display with white back light |
| Operating Temperature       | 5Deg C to 35Deg C                 |
| Linearity                   | 0.03g                             |
| Response Time               | 4-5sec                            |
| Tare Range                  | Full                              |
| Repeatability (Test Weight) | 0.002g                            |
| Net Weight                  | 3.6kg                             |
| Dimension (LxWxH) mm        | 320X210X315mm(LXWX H)             |
| Weighing Chamber            | 175X170X220 (LxWXH)mm             |

## Salient Features

External calibration, Glass windshield, Multiple weighing unit g, ct, oz, ib, tola, Rechargeable battery back, LCD display with white back light, stainless steel pan, adjustable fit, Piece counting function, Overload protection design, RS232C, interface.

## STANDARD OPERATING PROCEDURE FOR ELECTRONIC BALANCE



1. Make sure that the balance is kept clean.
2. Ensure that the calibration status is valid.
3. Ensure that spirit level is in the center of the circle.
4. Connect the power cable to the mains and switch „ON“.
5. Automatically self checking starts & ends with OFF.
6. Press ON/OFF key, all the display will glow.
7. Press “TARE KEY”, 0.00000 mark appears on the display.
8. The stability of the reading is obtained which is indicated by an arrow mark on the left side of the display.
9. Once the stability is attained, the balance is ready for weighing.
10. Place the material to be weighed on the pan & note down the reading after the arrow mark appears on the left side of the display.
11. After completion of weighing press, “ON/OFF” key, “STAND BY” light glows.
12. Clean the balance immediately after weighing.



## **STANDARD OPERATING PROCEDURE FOR MAGNETIC STIRRER WITH HOT PLATE**

1. Switch on the instrument.
2. Set temperature by turning the temperature knob in clockwise direction.
3. To select a speed turn the “SPEED” control clockwise until the desired mixing action is achieved. The illuminated “STIR” pilot light shows when the unit is stirring. Stirring capability is 100-1000.
4. Turn off the temperature and speed knob, then switch off the instrument.



## **STANDARD OPERATING PROCEDURE FOR MAGNETIC STIRRER WITH HOT PLATE**

1. Switch on the instrument.
2. Set temperature by turning the temperature knob in clockwise direction.
3. To select a speed turn the "SPEED" control clockwise until the desired mixing action is achieved. The illuminated "STIR" pilot light shows when the unit is stirring. Stirring capability is 100-1000.
4. Turn off the temperature and speed knob, then switch off the instrument.

# MODEL EQ-610

pH meter with built-in electronic buffer unbreakable electrode

Useful for U.G., Colleges, Industry

- Readout** : 4 digit LED display
- Range** : pH: 0 to 14.00 pH      mV: 0 to  $\pm 1999$  mV
- Resolution** : pH: 0.01 pH      mV: 1 mV
- Accuracy** : pH:  $\pm 0.01$  pH  $\pm 1$  least count  
mV:  $\pm 0.01\%$   $\pm 1$  least count
- Temp. comp.** : 0 to 100°C
- Power required** : 230 V AC  $\pm 10\%$  50 Hz, 4 VA
- Warming Period** : 5 minutes
- Weight** : 1 Kg (approx.)      **Body** : ABS
- Dimension** : 80 mm (H) x 235 mm (W) x 155 mm (L)
- Electronic buffer** : Equivalent signal output of ideal electrode in solution of 9.20, 7.00, 4.00 pH.  
Useful for self diagnostic.
- Electrode** : EQ-700 Unbreakable APH Sleeved Glass + Reference Combined Electrode  
Nano Technology Glass.
- Accessories** : Stand set, Patch cord for Electronic buffer, Buffer tablets for 9.20, 7.00, 4.00 pH,  
Screwdriver and Dust proof cover
- Technology** : Quantum Zuerkst Certified



## **PRINCIPLE**

A pH meter is an instrument that measures the hydrogen-ion activity in a liquid-based solution that helps in determining the acidity and alkalinity of solution termed as pH. This instrument measures the difference in electrical potential between a pH electrode and a reference electrode. This difference in electrical potential determines the pH of the solution.

## **ENVIRONMENTAL AND SAFETY CONTROLS**

1. Switch off the instrument when not in use.
2. Always wear gloves while using the instrument.
3. Do not allow any other liquid or substance to enter the solution whose pH is to be determined.
4. Do not clean the pH meter with any kind of liquid when in use.

## **CALIBRATION OF pH METER**

1. The pH meter is calibrated at least once before use.
2. The standard buffers of pH 4.0, pH 7.0, and pH 9.2 are used for calibration.
3. These standard buffers must be used as recommended by the manufacturer Sensorex, i.e., it must be used for one time and should be disposed of after calibration is finalized.
4. To calibrate, the probe tip is to be rinsed using distilled water/ deionized water and dry the tip using filter paper/tissue paper. Place the tip into pH 7.0 buffer solution and switch to READ mode.
5. Adjust the control knob to read pH 7.0 on display.
6. Switch back to STAND-BY mode.
7. Remove the electrode from pH 7.0 calibration buffer, wash it with distilled water and place the electrode in calibration buffer (pH 4.0 or pH 9.2 as per requirement).
8. Switch to READ mode.
9. Adjust the control knob to read the respective pH on display.

10. Confirm the calibration by reading the pH of standard pH 7.0 buffer for the second time.

### **STANDARD OPERATING PROCEDURE FOR CONDUCTIVITY METER**

1. Switch on the instrument.
2. Remove the electrode dipped in electrode buffer (3M KCl)
3. Rinse with distilled water.
4. Dry the outer surfaces of the electrode with a clean dry tissue.
5. Dip electrode in solution whose pH has to be measured.
6. After use rinse the electrode in distilled water, dry and dip the electrode back in the electrode buffer.
7. Switch off the instrument after use.

# MODEL EQ-611

pH meter cum thermometer with built-in electronic buffer

Useful for P.G. U.G., Research, Titration

|              |                       |
|--------------|-----------------------|
| Readout      | : 4 digit LED display |
| Function     | : pH, mV and temp.    |
| Range        | : pH : 0 to 14.00 pH  |
| Resolution   | : pH: 0.01 pH         |
| Accuracy     | : pH: $\pm 0.01$ pH   |
| Temp. comp   | : 0 to 100°C.         |
| Warming time | : 5 minutes           |
| Weight       | : 1 Kg (approx.)      |
| Body         | : ABS                 |

mV : 0 to  $\pm 1999$  mV

mV : 1 mV

mV :  $\pm 0.1\%$

Temp.: 0 - 100°C

Temp. : 0.1°C

Temp. :  $\pm 1\%$



|                   |   |
|-------------------|---|
| Dimension         | : 80 mm (H) x 235 mm (W) x 155 mm (L)   |
| Electronic buffer | : Equivalent signal output of ideal electrode in solution of 9.2, 7.00, 4.00 pH.<br>Useful for self diagnostic.         |
| Electrode         | : EQ-700 Unbreakable APH Sleeved Glass + Reference Combined Electrode<br>Nano Technology Glass.                         |
|                   | : EQ-702 Unbreakable Stainless Steel Temperature Probe with Silicone Teflon Wire  |
| Accessories       | : Stand set, Patch cord for Electronic buffer, Buffer tablets for 9.20, 7.00, 4.00 pH, Screwdriver and Dust proof cover |
| Power required    | : 230 V AC $\pm 10\%$ 50 Hz, 5 VA   |
| Technology        | : Quantum Zuerkst Certified   |

## **PRINCIPLE**

A pH meter is an instrument that measures the hydrogen-ion activity in a liquid-based solution that helps in determining the acidity and alkalinity of solution termed as pH. This instrument measures the difference in electrical potential between a pH electrode and a reference electrode. This difference in electrical potential determines the pH of the solution.

## **ENVIRONMENTAL AND SAFETY CONTROLS**

1. Switch off the instrument when not in use.
2. Always wear gloves while using the instrument.
3. Do not allow any other liquid or substance to enter the solution whose pH is to be determined.
4. Do not clean the pH meter with any kind of liquid when in use.

## **CALIBRATION OF pH METER**

1. The pH meter is calibrated at least once before use.
2. The standard buffers of pH 4.0, pH 7.0, and pH 9.2 are used for calibration.
3. These standard buffers must be used as recommended by the manufacturer Sensorex, i.e., it must be used for one time and should be disposed of after calibration is finalized.
4. To calibrate, the probe tip is to be rinsed using distilled water/ deionized water and dry the tip using filter paper/tissue paper. Place the tip into pH 7.0 buffer solution and switch to READ mode.
5. Adjust the control knob to read pH 7.0 on display.
6. Switch back to STAND-BY mode.
7. Remove the electrode from pH 7.0 calibration buffer, wash it with distilled water and place the electrode in calibration buffer (pH 4.0 or pH 9.2 as per requirement).
8. Switch to READ mode.
9. Adjust the control knob to read the respective pH on display.



10. Confirm the calibration by reading the pH of standard pH 7.0 buffer for the second time.

### **STANDARD OPERATING PROCEDURE FOR CONDUCTIVITY METER**

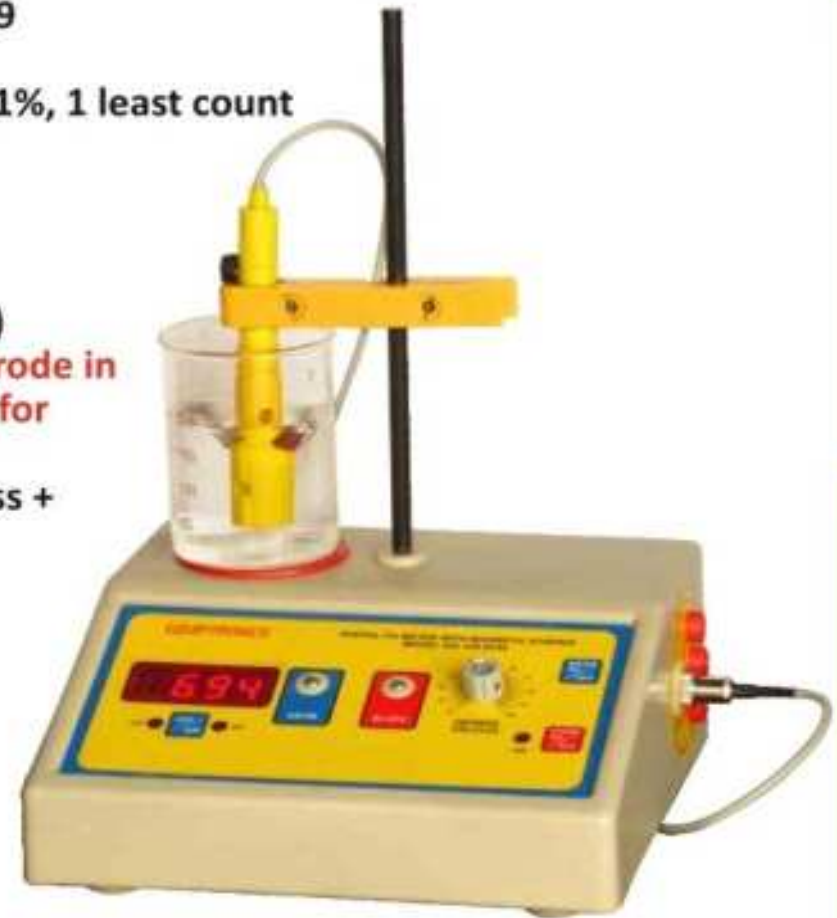
1. Switch on the instrument.
2. Remove the electrode dipped in electrode buffer (3M KCl)
3. Rinse with distilled water.
4. Dry the outer surfaces of the electrode with a clean dry tissue.
5. Dip electrode in solution whose pH has to be measured.
6. After use rinse the electrode in distilled water, dry and dip the electrode back in the electrode buffer.
7. Switch off the instrument after use.

# MODEL EQ-614A

## pH Meter with inbuilt Magnetic Stirrer & Electronic Buffer

Useful for P.G. U.G., Research, Titration

- Readout** : 4 digit LED display
- Range** : pH: 0 to 14.00      mV: 0 to  $\pm 1.999$
- Resolution** : pH: 0.01      mV: 1
- Accuracy** : pH:  $\pm 0.01$  pH  $\pm 1$  least count      mV:  $\pm 0.1\%$ , 1 least count
- Temp. comp.** : 0 to 100°C
- Power required** : 230 V AC  $\pm 10\%$  50 Hz, 4 VA
- Warming time** : 5 minutes
- Weight** : 1 Kg (approx.)      **Body** : ABS
- Dimension** : 90 mm (H) x 225 mm (W) x 220 mm (L)
- Electronic buffer** : Equivalent signal output of ideal electrode in solution of 9.20, 7.00, 4.00 pH. Useful for self diagnostic.
- Electrode** : EQ-700 Unbreakable APH Sleeved Glass + Reference Combined Electrode  
Nano Technology Glass.  
ORP ELECTRODE AT EXTRA COST.
- Stirrer speed** : 500 RPM fixed.
- Accessories** : Stand set, Electrode Clamp, Rod, Patch cord for Electronic buffer, Teflon magnet, Buffer tablets for 9.20, 7.00, 4.00 pH, Screwdriver and Dust proof cover
- Technology** : Quantum Zuerkst Certified



## **PRINCIPLE**

A pH meter is an instrument that measures the hydrogen-ion activity in a liquid-based solution that helps in determining the acidity and alkalinity of solution termed as pH. This instrument measures the difference in electrical potential between a pH electrode and a reference electrode. This difference in electrical potential determines the pH of the solution.

## **ENVIRONMENTAL AND SAFETY CONTROLS**

1. Switch off the instrument when not in use.
2. Always wear gloves while using the instrument.
3. Do not allow any other liquid or substance to enter the solution whose pH is to be determined.
4. Do not clean the pH meter with any kind of liquid when in use.

## **CALIBRATION OF pH METER**

1. The pH meter is calibrated at least once before use.
2. The standard buffers of pH 4.0, pH 7.0, and pH 9.2 are used for calibration.
3. These standard buffers must be used as recommended by the manufacturer Sensorex, i.e., it must be used for one time and should be disposed of after calibration is finalized.
4. To calibrate, the probe tip is to be rinsed using distilled water/ deionized water and dry the tip using filter paper/tissue paper. Place the tip into pH 7.0 buffer solution and switch to READ mode.
5. Adjust the control knob to read pH 7.0 on display.
6. Switch back to STAND-BY mode.
7. Remove the electrode from pH 7.0 calibration buffer, wash it with distilled water and place the electrode in calibration buffer (pH 4.0 or pH 9.2 as per requirement).
8. Switch to READ mode.
9. Adjust the control knob to read the respective pH on display.

10. Confirm the calibration by reading the pH of standard pH 7.0 buffer for the second time.

### **STANDARD OPERATING PROCEDURE FOR CONDUCTIVITY METER**

1. Switch on the instrument.
2. Remove the electrode dipped in electrode buffer (3M KCl)
3. Rinse with distilled water.
4. Dry the outer surfaces of the electrode with a clean dry tissue.
5. Dip electrode in solution whose pH has to be measured.
6. On Magnetic stirrer.
7. Note down the reading.
8. After use rinse the electrode in distilled water, dry and dip the electrode back in the electrode buffer.
9. Switch off the instrument after use.

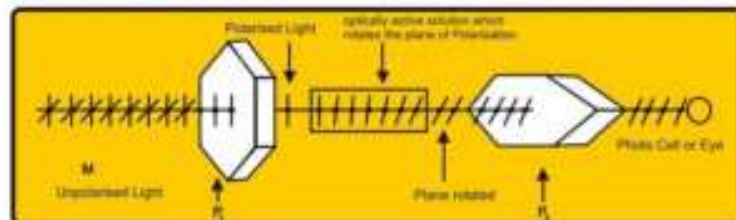
# DIGITAL POLARIMETER

**MODEL EQ-801**

Digital Polarimeter  $\pm 200^\circ$  - levo & dextro digital readout

Useful for undergraduate & colleges

THE ONLY ONE OF ITS KIND



Get superb accuracy with Pointer and Lens. No need of dark room & sodium lamp. No need of zero, load the sample & read  
Can be calibrated with degree scale or international sugar scale



|                                       |   |
|---------------------------------------|---|
| <b>Readout</b>                        | : 3½ digit LED display for degrees measurement  |
| <b>Detection of angle of Rotation</b> | : $\pm 200^\circ$ (- for levo and + for dextro)   |
| <b>Resolution</b>                     | : $0.1^\circ$   |
| <b>Accuracy</b>                       | : $\pm 0.1^\circ$   |
| <b>Calibration</b>                    | : Factory calibrated with Shimzadu standard   |
| <b>Detection of light</b>             | : Electronic sensor and meter which leads to repeatability of 0.1 degree  |
| <b>Power required</b>                 | : 230 V AC $\pm 10\%$ 50 Hz, 7 VA   |
| <b>Weight</b>                         | : 4 Kg (approx.)  |
| <b>Body</b>                           | : <b>NANO CRYSTALLINE ABS™</b>  |
| <b>Dimension</b>                      | : 180 mm (H) x 325 mm (D) x 485 mm (L)  |
| <b>Sample tube</b>                    | : PVC Material 10 cm & 20 cm, for water based solution<br>Glass/Teflon Tube also available for organic solution (at extra cost) |
| <b>Accessories</b>                    | : Screwdriver and Dust proof cover  |
| <b>Technology</b>                     | : Quantum Zuerkst Certified   |

The circuit is designed to match the sodium wave length.  
The intensity is measured on photo cell & meter

## **Standard operating Procedure for Digital Polarimeter**

1. Switch On the electric supply and within 10 minutes, the sodium lamp to glow optimally.
2. Check the polarimeter tube and its cabinet. It should be clean.
3. Position the incoming light source, polarimeter tube and cabinet in a line by rotating the revolving stand of sodium lamp.
4. For clear vision of colour shade, adjust the upper and lower eyepiece to anterior and posterior side.
5. Fill the polarimeter tube with water / blank in which the substance is dissolved and place this in cabinet. (determine at Temperature 25°C, unless & otherwise specified in the procedure/monograph).
6. Rotate the knob at the anterior right and match the colour shade in both sections by observing in lower eyepiece.
7. Take the reading in upper eyepiece, it should be about zero. Rotate the vernier scale at the left anterior head of instrument. Add the reading of main scale and vernier scale, and find the reading of rotation.
8. Fill the polarimeter tube with the liquid / prescribed solution. Solution / liquid should be clear and free from air-bubble.
9. Rotate the knob for matching the colour shade similarly as step 6.
10. Take the reading in + or – in upper eyepiece and note it. (Take three concurrent readings of blank as well as sample and consider the mean value).

11. After completion of reading, take out the polarimeter tube from its cabinet & clean. Keep it in its box. Then switch off the instrument.

# MODEL EQ-601

POTENTIOMETER with built-in standard cell, one button calibration.  $\mu\text{P}$  based.

Under Graduates & Colleges

- Range :  $\pm 1.999 \text{ V}$
- Readout : 4 digit LED display
- Accuracy : .001 Volts
- Power required : 230 V AC  $\pm 10\%$  @50 Hz, 2 VA
- Warming period : 5 minutes
- Weight : 1 Kg. (Approx.)
- Body : **NANO CRYSTALLINE ABS™**
- Dimension : 80 mm (H) x 235 mm (W) x 155 mm (L)
- Standard cell : 1.018V inbuilt
- Accessories : Screwdriver & Dust proof cover,  
EQ-706 Platinised Platinum electrode (25MM<sup>2</sup> platinum plate),  
EQ-705 Reference Electrode (Ag/AgCl KCL filled)
- Technology : Quantum Zuerkst Certified
- Recommended Electrodes (At extra cost) : EQ-703 Pt + Reference combined (KCL filled)  
EQ-707 Ag/Al/Zn/Cu Metallic Electrodes  
EQ-704 Calomel Electrode (Hg/HgCl KCL filled)





# STANDARD OPERATING PROCEDURE FOR POTENTIOMETER

1. Before connecting the mains keep the controls as under
  - (a) SELECTOR switch to "O".
  - (b) STIRRER switch to "MIN". (to its built-in "OFF" position)
  - (c) SET POINTER to about the middle of its full range.
2. Connect the mains supply (230 Volts 50 HZ) and switch "ON" the MAINS switch. The red pilot lamp will then light up and the display will show some reading near about to 0 mv.
3. Rotate the STIRRER control knob and adjust the stirrer speed.
4. Connect the pins of the sensors to the sockets provided on the machine on both sides of the plated rod. (Calomel to black socket) and lower the sensors with the spring clamp. So that the tips of the sensors are well immersed in the solution in the beaker. Care should be taken to see that the tips may not get smashed by the rotating magnetic rotor. Turn SELECTOR to "POT-G" or "POT-M" as the case may be. To "POT-G" if Class/Calomel pair is used and to "POT-M" for Metal/Calomel pair.
5. The display will now show some positive or negative reading depending on the nature and strength of the solution. Adjust it near to „0" by SET POINTER knob. Note: The instrument is provided with „COARSE" and „FINE" SET POINTER controls. Fine control can be used to adjust the milli-volts reading precisely to 0 on the digital display. While coarse control is used for major change in the milli-volt reading. When "SELECTOR" is in „O" or „O-R" position, both FINE and COARSE "SET POINTER" will have no control on Digital display.
6. Add some drops of solution from the burette and note the reading on the digital display. Add fixed volume of solution from the burette (say 1ml, 0.5 ml OR 0.1 ml) every time and note the reading of "CHANGE IN MILLIVOLTS" for each addition. It will be found that for the same addition

every time the display will show larger and larger change in millivolts and at the END POINT, the change will be suddenly large. With further additions, the change will be progressively smaller and smaller. Thus the change in millivolts will be maximum at the END POINT. The reading corresponds to the maximum change in millivolts should be considered for calculations. A special feature of this instrument is that, one can bring the display reading back to 0 mv and add the further solution from the burette. Since only change in millivolts is to be noted after each addition the shifting of reading to 0 mv makes no difference. Thus by adjusting display reading to 0 mv with each addition highest accuracy can be obtained by skillful handling. If the changes in millivolts are very small a graph of the change in millivolts “v/s” volume added may be drawn for accurate location of “END POINT”.