

## NOTES ON THE USE OF THE HI 8819 CONDUCTIVITY METER

### General Description

The HI 8819 is a digital benchtop conductivity meter designed for simplicity of use in measuring electrical conductivity in liquids. Four ranges of conductivity measurements are provided with manual temperature compensation. Front panel features a large LCD display with splash proof touch keys. The instrument is operated from AC mains supply.

Each instrument is supplied with a plastic conductivity probe with 1 meter cable length and a dust cover.

### The Front Panel

See Figure 1.

*Membrane Keys:*

|                                |   |  |
|--------------------------------|---|--|
| <b>ON/OFF</b>                  | : | Switches instrument on and off.  |
| <b>COND/TEMP</b>               | : | Selects the display of conductivity readings or temperature settings for compensation. |
| <b>199.9 <math>\mu</math>S</b> | : | Selects the range 0.0 to 199.9 $\mu$ S.  |
| <b>1999 <math>\mu</math>S</b>  | : | Selects the range 0.0 to 1999 $\mu$ S.   |
| <b>19.99 <math>\mu</math>S</b> | : | Selects the range 0.0 to 19.99 $\mu$ S.  |
| <b>99.99 <math>\mu</math>S</b> | : | Selects the range 0.0 to 99.99 $\mu$ S.  |

*Knob:*

|                    |   |   |
|--------------------|---|---|
| <b>TEMPERATURE</b> | : | For setting to the temperature of the test solution for temperature compensation. |
|--------------------|---|---|

### 4. The Rear Panel

See Figure 2

*Electrode Connection:*

Connect the conductivity electrode to the DIN socket located at the rear of the instrument.

*Voltage selector switch:*

Set the voltage selector switch to 110V or 220V BEFORE applying power to the equipment.

## 5. Calibration

Initial preparation:

- If you are measuring in the mS range, calibrate the meter using HI 7030 conductivity solution (12.88 mS at 25°C) or HI 7034 conductivity solution (80 mS at 25 °C) depending on which of the two mS ranges you intent to use. For the µS ranges, use HI 7031 conductivity solution (1,413 µS at 25°C) when calibrating in the range from 0 to 1999 µS or HI 7033 conductivity solution (90 µS at 25°C) when calibrating in the range from 0 to 199.9 µS.
- Use a thermometer with an accuracy of 1 °C for measuring the temperature of the solution.
- Rinse the electrode thoroughly in distilled water if you have been using the electrode. This is to minimize contamination of the calibration solution.

Procedure:

- Pour a small quantity of the conductivity solution in a beaker.
- Immerse the conductivity probe and thermometer in the solution and wait for therm equilibrium.
- Note the temperature of the conductivity solution.
- Switch the instrument on and press "COND/TEMP" key to display temperature settings.
- Adjust the "TEMPERATURE" knob to display 25 °C if you are using 25 °C as the reference temperature.
- Press the "COND/TEMP" key to display conductivity readings and select the appropriate conductivity range.
- Using a small screwdriver adjust the trimmer on the rear panel until the display shows the conductivity reading at the temperature of the solution noted earlier (see Table of conductivity vs temperature on the solution label).
- The calibration is now complete and the instrument is ready for use.

To check the calibration:

- Press the "COND/TEMP" key to display the temperature.
- Adjust the "TEMPERATURE" knob to display the temperature of the calibration solution, i.e. the temperature noted with the thermometer.
- Press the "COND/TEMP" key to display conductivity.
- The display should read the conductivity of the calibrating solution at the reference temperature.

**\*\*NOTE\*\*** The instrument should be recalibrated regularly or whenever the probe has been changed.

## 6. Conductivity Measurements

Make sure that the instrument has been calibrated before taking conductivity measurements. Connect the probe to the meter and switch the instrument on.

- Take the temperature of the solution with a thermometer.
- Press the "COND/TEMP" key to select temperature mode.
- Adjust the "TEMPERATURE" knob until LCD displays the temperature of the solution.
- Press the "COND/TEMP" key to select conductivity measurements.
- Immerse the probe in the solution.

- If the display shows only a "1", it means an over-range condition in which case the next higher range should be selected.  
The conductivity reading displayed has been manually compensated for temperature variations.
- After measurement is completed, the instrument should be switched off and the probe should be cleaned. (see section 7)

**7. Probe Maintenance**

Rinse the electrode with tap water after every series of measurements.