

## Digital pH and Redox Meter IPC-1735-M

### Description

The instrument is designed for pH and Redox measurements both in the laboratory and in the field. Readings are given on a liquid crystal display and sockets are fitted to enable the connection to an external meter, chart recorder or computer interface.

### Battery

A 9V battery of the 6LR61 (PP3) type is required to operate the instrument. Access to the battery compartment is obtained by removal of the back panel of the case. When fitting the battery, care should be taken to ensure correct polarity.

### Controls

All controls are mounted on the top panel and include off-pH-mV mode switch, buffer control and a temperature selection control, range 0 to 100°C, to provide manual temperature compensation for the readings. To preserve battery life, the mode switch should always be maintained in the 'off' position when the instrument is not in use. Low battery condition is shown by the display.

### pH measurement

pH measurement can be carried out using a combination pH electrode available as an accessory. Connect the electrode to the instrument via the BNC socket marked 'pH' and immerse the end of the electrode in a suitable buffer solution, preferably one having a pH value near to that of the solution under test.

Set the temperature selection control to the temperature of the buffer solution. Turn the mode switch to 'pH' and adjust the buffer control until the display gives the pH value of the buffer solution. Remove the electrode from the buffer solution and rinse it well with distilled or deionised water.

Immerse the electrode in the solution under test, agitate gently and read off the pH value from the display.

### Redox measurement

Redox measurements can be carried out using metal and reference electrodes available as accessories. Suitable electrodes should be connected to the pair of red and black 4mm sockets marked 'mV', observing the correct polarity. The working electrode should be connected to the red socket and the reference electrode to the black socket. Alternatively, unshielded working electrodes can be connected to the BNC socket marked 'pH' as the centre connection to this is linked internally to the red socket and the outer connection is linked internally to the black socket.

Immerse the ends of the electrodes in the solution under test, turn the mode switch to 'mV' and note the reading in mV given on the display. Readings are given in steps of 10mV up to  $\pm 1.99V$ .

### External meter, chart recorder or computer interface.

A pair of red and black 4mm sockets are fitted to enable results to be fed to an external readout device, having a high input impedance. Use the buffer control to zero the reading. The output voltage range is +700mV to -700mV, corresponding to 0pH and 14pH respectively.

### Electrode care

The accuracy and repeatability of pH determinations will depend upon the state of the electrode. To obtain optimum electrode performance and thus dependable pH measurements, the electrode should be treated with care and the manufacturers instructions observed.