USERS MANUAL

FOR COMBINATION pH ELECTRODE ERH-111

Main Characteristics

The combination electrode ERH-111 is an measuring link, designed for pH measurement in water solutions. pH measurements are widely used in food industry, agriculture, chemical industry, energetic also in medicine and in environment protection.

It is not advised to use the electrode in solutions with many deposits or fats like emulsions with oils sewage etc. Such deposits should be removed from the solutions before measurements.

Small quantity of the reference solution makes using of the electrode in inline continuos measurements, in very clear waters under high pressure very limited.

Using The Electrode

During measurements with the combination electrode ERH-111 it is important to follow the below given rules.

1. The glass membrane of the electrode should be wet before measurement. If it will be too dry it may decrease the sensitivity and increase the instability of the readings.
2. One should avoid permanent contamination of the glass membrane and electrolytic junctions.
3. During carrying the electrode from one solution to another, it is necessary to wash it in distilled water and dry with tissue paper to avoid carrying contamination to the .measured solution.
4. During the measurements the electrode shouldn't touch the bottom and walls of the vessel in which the measurement is done.
5. To ensure the high accuracy of measurement the electrode should be calibrated in buffer solutions.
6. Buffer solutions should be chosen in such a way that the measured values should be between the buffers values.
7. The electrode shouldn't be used in solutions with fluorine-hydrogen acid.
8. Using the electrode in solutions with extreme high pH values, in concentrated and hot salt solutions, in highly hygroscopic solutions with proteins, fats, oils may cause measurement errors.
9. It is very important to protect the connector of the electrode against damp.

Preparation To Measurement

Before starting the measurements new electrode (stored dry or in saturated chloride-potassium solution) should be placed in distilled water or in

buffer solution for 15 minutes. It is done to water th surface of the glass membrane, or to wash ot absorbed potassium ions from the membrane.

Calibration Of The Electrode

The electrode should be calibrated befor starting the measurement wit a new electrode, c periodically depending on the frequency of th measurements. It is done in buffer solutions thei value depends on the measurement range. Th calibration should be done according to the pl meter producer.

Storage Of The Electrode

After finishing the measurements the ERH-11 electrode should be washed in distilled water, an then kept on the air. In case of long breaks betwee measurements the electrode may be placed in th packaging delivered by the producer.

Storing in water or in low concentratio potassium-chloride solution is not recommendec because of the possibility of precipitation silver chloride inside the electrolytic junctions. On th other hand keeping the electrode in KCl solution i profitable for the regeneration of the electrode. Thi may cause short time lowering sensitivity of th electrode, but after keeping it for 15 minutes in th distilled water or in buffer solution everything wi return to normal state.

Technical Data

Range	0 – 14 pH
Temperature range	0 – 80 °C
Membrane resistance (in 20 °C)	200 – 300 MΩ
Junctions resistance	1 – 3 MΩ
Zero point ($pH_{E=0}$)	7,0 ± 0,5 pH
Reference solution	4,0M KCl +AgCl
Diameter	12,0 ± 0,5 mm
Length	120 ± 5 mm
Minimal immersion	20 mm
Maximal immersion	120 mm
Weight (net)	≈ 60 g
Junctions material	glass-fibber
Cable length	1 m
Connector	BNC-50/W4