

## INSTRUCTIONS

### PH and ORP electrodes

#### DESCRIPTION

Each electrode is tested separately and ready for use before shipment. Test values:

- at 25°C, the slope is above 95% of theoretical value
- zero deviation (pH 7 at 25°C) is less than 20 mV

#### STORAGE

If there is no special mention, the electrode should be stored with their protection cap, the diaphragm immersed in the KCl solution (3 Mol).

The temperature is between 10 to 30°C.

**Caution:** - the electrode would not afford a negative temperature under -5°C.

In case of leakage of KCl solution a white crystallized salt appears, just rinse it with clean water. Then, it frequent to keep wetting the diaphragm: let it immersed in clean water for 1 hour to 1 day.

Caution: do not use demineralised water.

#### CALIBRATION

Rinse carefully the electrode with water. If air bubbles are present, shake gently the electrode to take them out of the gel. Immerse the diaphragm in the buffer solution.

**Caution:**

- rinse with clean water the electrode before to use another buffer solution.
- change regularly the buffer as it is ageing and contaminated by the time.
- better if the buffer solution is at the nominal process temperature.
- the electrode should be at an angle of 30° from the vertical during the calibration.

Follow the pH or ORP metre instructions.

#### AGEING

By the time, the electrode is ageing and the response time is increasing, a reduced slope and a significant zero deviation. Even during storage, the electrode is ageing. If you use electrode with a refilling reservoir, check regularly the level. The combination electrodes with gel electrolyte are nearly free maintenance.

#### CLEANING

If necessary, the electrode can be cleaned up with tap water. Better not to use paper that can let fibres on the diaphragm or damage it. For ORP electrodes, it is possible to use a soaking paper on the metal rod. Protect the electrode from protein contamination by immersion in a pepsin/HCl solution. After a time in oiled solution, the electrode could be cleaned up by immersion in acetone or ethanol for few seconds (rinse it immediately with tap water). For partially reversing the ageing effect, it is possible to immerse the diaphragm 2 minutes in a re-conditioning solution (then, better to replace as soon as possible the electrode). **CAUTION:** respect the protection rules. After any cleaning or renewing operation, plunge the electrode in distilled water, then in KCl 3 Mol solution. Proceed to a calibration sequence before use. Check that cable and connectors are dry and dirt free.

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**pH and ORP  
electrodes**

150 M1 01 A

**MES**

150-01 -1/1

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