

DESCRIPTION:

CODE: 06140200

The pH electrode is made with sturdy epoxy body, the epoxy body is extended over the pH sensitive glass bulb so that the bulb is well-protected.

The built-in reference electrode is of the sealed, gel-filled design which eliminates refilling problems and allows the electrode to be fully immersed without damage.

The pressure range is up to 100 psi. (6,9 bars).

The sensor it is supplied with the pH sensitive glass bulb immersed in a maintenance liquid, in a hermetic bottle in order to avoid leakage or dried.

Easy and fast connection by means of BNC connector to the PROGRES pH or pH/EC transmitter. This transmitters proportion and outlet of 4 – 20 mA that corresponds from 0 to 14 pH.



TECHNICALS OF MAINTENANCE:

- The electrode goes immersed in a plastic bottle, hermetic and full of tampon liquid pH4 (potassium chloride) in order to avoid leakage or dried when the sensor is being transported or stored.
- The electrode has to be on this bottle until its use. This bottle can be stored until we will take out the sensor in the way to save it until the next campaign, and to put it in the bottle.
- If on the transport the airlock that it is allocated inside the electrode, it has being moved to the bulb, it can be resituated doing a sudden gesture: holding the up part and shake it to down with dry movements, as it is done with the clinical thermometer.
- Take into account that pH electrodes expires with the time and use. This will be note when we will not be able to read correctly the low values and receive a slow answer. This problem it can be solved with a recalibration of PROGRES transmitter of the pH sensor.
- If when we are doing a routine testing or recalibration , with pH7 and pH4 tampon solutions, the reading of this last value is superior in 10%, the electrode will need a cleaning and a posterior recalibration.

STORAGE:

When the pH sensor will not be used for several days or for a long period is convenient to draw out it and stored it in a bottle with the original solution or with new pH4 tampon liquid of potassium chloride.

It is recommendable to keep the sensor stored in vertical position for a perfect conservation and preparation to its use.

CALIBRATION:

The calibration will be done with the sensor connected to a PROGRES pH or pH/EC transmitter and having a reading on the Agronic unit.

The transmitter has two powermeters inside to do the calibration: **offset** for the adjustment to pH7 and **slope** for the adjustment pH4.

Procedure:

1. Extract the electrode from its measurement place and immerse in distilled water or in a diluted solution near to pH7, and shake it sturdily for have a faster reaction.
2. Take out the electrode and shake it strongly to drop off the remaining drops of water.
3. Submerge in a pH7 pure tampon solution and shake it in until you will get a stable reading. Regulate the **offset** transmitter powermeter until you will get a reading of pH7.
4. Take out and submerge in distilled water or in a solution near of pH4. Shake it.
5. Take out and shake sturdily to drop off from possible sticky drops.
6. Submerge in pH4 pure tampon solution. Shake the solution until you will reach a stable reading. Regulate the reading with the powermeter **slope** until you will get the right reading.
7. Take out and submerge in distilled water or diluted solution near to pH7.

You have to go back to the 3 step any times you need until it will not be necessary another readjustment.

CLEANING:

An uncleanliness coating on the electrode can originate a wrong reading. Depending on the coating type it will determinate the type of cleaning: The soft layers can be taken out with a dry hit or with a water steam. The chemical or organic hard layers have to be taken out chemically. There are liquid already prepared to do this work. Only in extreme occasions the bulb can be cleaned mechanically, but it has to take into account that the occasioned abrasion can cause permanent damages.

When with the cleaning we can not re-establish the sensor functionality we could try the reconditioning.

RECONDITIONING:

When the electrode, due to its use and caducity shows several problems for its adjustment or slowly reading, it can be useful to reconditioning by means of chemical treatments. This treatments, due to its severity in attacking the glass of the electrode can even produce, in some cases, a irreversible damage.

We propose three treatment by severity order:

1. Submerge the electrode border in 0,1 N of HCl solution during 15 seg. After this, wash away and submerge in 0,1 N NaOH solution other 15 seg. and wash away again. Repeat this operation three times and prove the working of the electrode. If we do not get the right answer, we have to follow the second point.
2. Now submerge the electrode in 20% of NH₄F.HF solution (bisulphite ammoniac) during 2 or 3 minutes, wash away and verify the actuation. If you do not get a good reconditioning, you have to the next point.
3. Submerge the electrode in 5% HF solution during 10 or 15 seg. washing away and rapidly submerge in 5 N of HCl solution. Wash away and verify the working. If after do all of this, you can not have a good answer from the sensor you will have to replace it.

Note: This treatment have to be done taken all the necessary cautions due to the extremely dangerousness of this products (HF and especially NH₄F.HF) and always for qualified staff.

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