

OBJECTIVE

Procedure for calibrating the pH sensor.

PREPARATORY STEPS

1. Check

Ensure that the glass bulb of the pH sensor has not been allowed to dry out. If it has dried out you will get erroneous calibration results. If it has dried out please soak the sensor in pH4 solution for at least 3 hours prior to calibration.

2. Required Items

- pH calibration solutions, pH7 and pH4 to form a 2-point calibration. Optional pH10 calibration point also available where required.
- Water bath set to 25°C, where possible.

3. Preparation

The pH7 and pH4 solutions should be placed in the water bath, so that the temperature is brought up to 25°C. If no water bath is available, the solutions should be placed on the bench so that they can reach room temperature overnight, prior to starting the calibration procedure.

Remove the pH storage cap from the probe's pH sensor prior to probe insertion and check the sensor is not dry. Rinse and thoroughly dry with Deionised water.

4. Conditioning

If using a water bath, or calibrating on the bench, the Aquaprobe should be placed into the calibration solution, for approximately 5 minutes so that the temperature of the probe and calibration solution can reach equilibrium. The sleeve must be fitted and the full probe end submerged, do not isolate the pH sensor to calibrate it.

Special note regarding ISE sensors, ISE sensors are provided with small red caps. If you have an ISE sensor such as ammonium or nitrate fitted to the probe, these caps **MUST** be fitted before the probe is put into the pH calibration solution. This will prevent the high ionic strength of the pH solution from interfering with the ISE sensor measurement.

5. Equipment

- Aquaprobe.
- Calibration instrument; Aquameter / Bluelink / Aquacal PC software
- Chosen calibration solution.
- Water bath.

OPERATING MODE

CALIBRATION

Calibration guidance will assume you are using an Aquameter, procedure will be similar when using Bluelink or AquaCal.

Due to the way in which pH calibration works, the Probe must be calibrated at pH7.00 before calibrating at pH 4.01 or pH 10.00. Never calibrate at pH 4.01 or pH 10.00 before first calibrating at pH7.00

Procedure:

1. With the Aquaprobe having soaked in the calibration solution for 5 minutes ensure the temperature and pH measurements are completely stable on the Aquameter screen.
2. Select the desired calibration solution. Press the MENU key then select Calibration>Full Cal>pH/ORP to enter the pH/ORP calibration screen.
3. Move the cursor downwards to the correct calibration solution option, for example pH7.
4. Once your desired calibration option is selected, press the OK button on the Aquameter to begin the calibration process.
5. A calibration report value will be displayed after the calibration is complete.

CONTROL

Check the calibration report value is within the acceptable range.

For pH7 calibration you will receive an offset value, the acceptable range is +/-30mV..

For pH4 and 10 calibration you will receive a Slope value. The acceptable range for this is >40mV/pH. This value changes over usage; a new sensor will have a slope of 57mV/pH, and old sensor that requires replacement will be around 40mV.

Once calibration is complete press the escape button until you can see the live readings. Check that the shown pH value matches the chosen calibration solution.

Check that the reading is stable and does not gradually change. If the value does change it would suggest that the temperature was not in equilibrium with the probe when the calibration started. You must soak the probe in the calibration solution for 5 minutes prior to beginning the calibration.

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