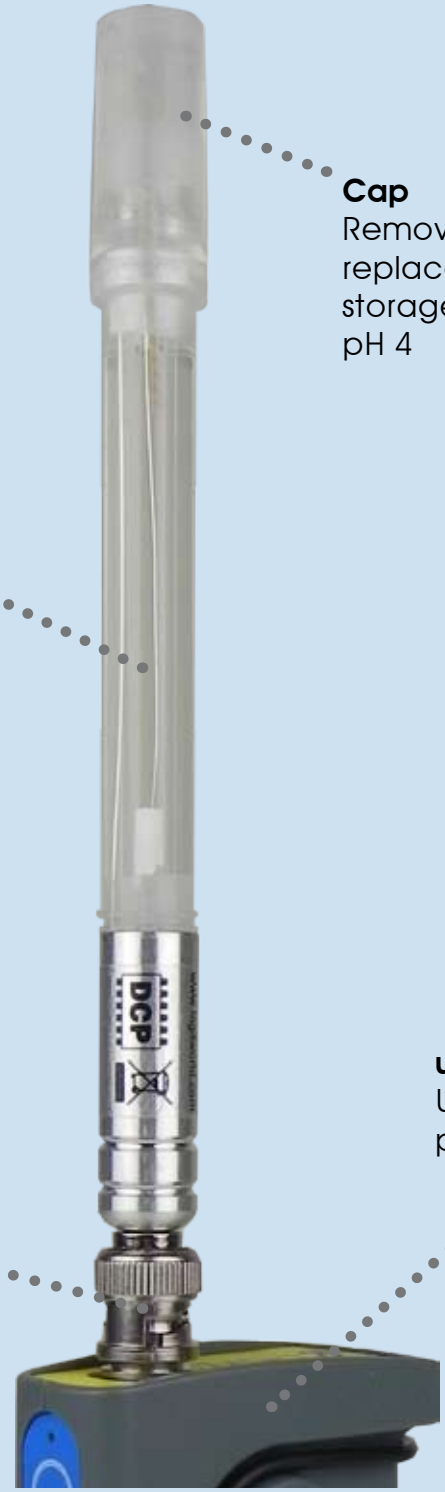
uLog pH electrode only

Overview



Cap
Remove before use and replace when finshed using storage solution or buffer of pH 4

pH electrode
Range from 0 to 14 pH
Electrode tip must always be stored wet using cap

uLog pH•ion•mV adapter
Use to measure Ion's, mV's or pH (default) part no. D104050

BNC plug
Push and twist connection

•Sensors can lock together

•Fit direct to stand

•Cable storage

Easy USB sensing and datalogging

Important - care for your pH electrode

Unlike most modern sensors pH electrodes are electrochemistry technology with a finite life and are ultimately a disposable consumable. However, you can greatly prolong the life of your pH electrode by taking care of it. In particular the electrode tip (bulb) is fragile and should **always** be stored wet when not in use using the cap supplied (after washing with deionised water before and after use). Ideally use 4.0pH buffer solution in the cap provided for short or long term storage.

Take care electrode is fitted securely to BNC plug & note is only waterproof up to metal sleeve.

Always take care when using any chemicals - carry out thorough risk assessments before use

Calibrating the pH electrode

When new this probe will give reasonably accurate readings, but like all pH electrodes as it ages it will become less accurate and will need calibrating.

To calibrate the electrode you will need a minimum of one buffer solution of pH 7. This is a single point calibration. The most accurate method is to use pH 7 and one of 4.01, 10 or a suitable buffer higher or lower than 7. This is called 2 point calibration.

Ensure that buffer solutions are used at their recommended temperature as per their instructions - you could use a uLog temperature sensor when calibrating to ensure correct temperature is maintained (please note this is not automatic temperature compensation).

To calibrate the electrode connect the uLog pH sensor and start SensorLab.

Click on the arrow above the live sensor readings and select 'Calibrate'.

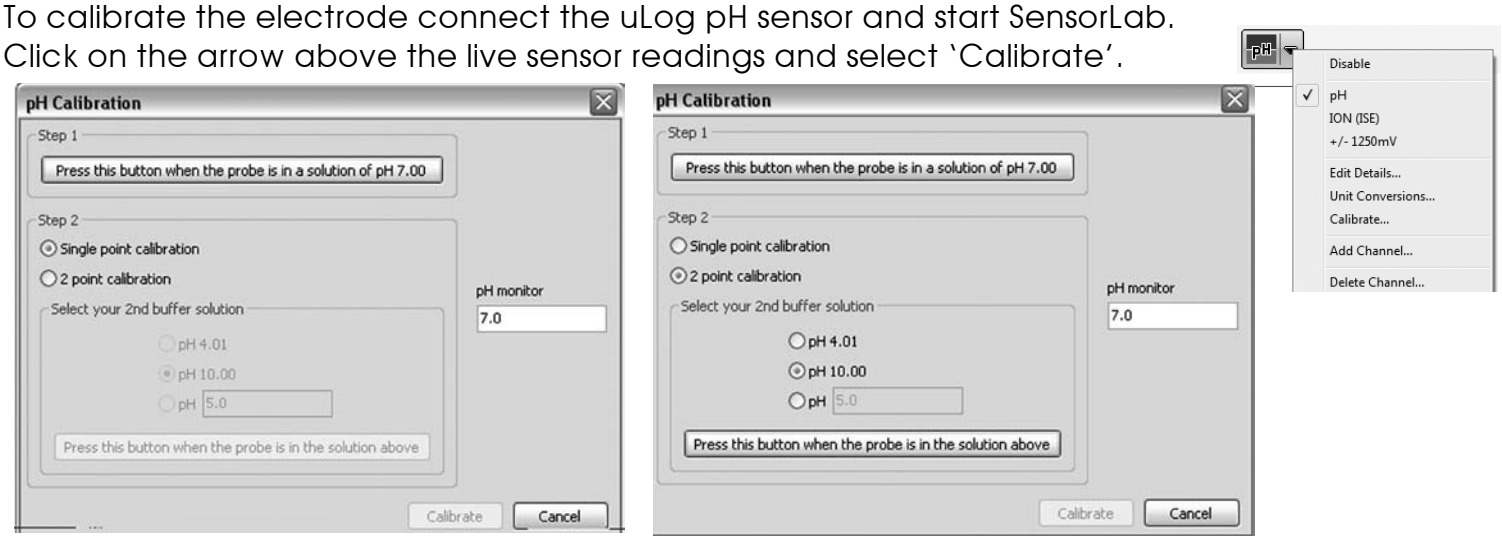


fig 1 *fig 2*

1. Place the electrode in a pH 7 buffer solution and click on the top button shown in fig 1. If performing a single point calibration, click 'Calibrate'.
2. Rinse electrode in distilled water, **do not dry** (*pH electrodes should never be allowed to dry out*)
3. If performing a single point calibration proceed to step 8, otherwise place the electrode in a second buffer and select this buffer value as shown in fig 2 (the example shows a buffer of 10).
4. Click the bottom button and then click on 'Calibrate'.
5. Rinse again but do not dry the electrode.
6. Recheck the electrode with the pH 7 solution.
7. Rinse again but do not dry the electrode.
8. Check the electrode with all solutions again to ensure correct calibration.

The calibration will change over time as the electrode ages. To ensure a high level of accuracy always calibrate before each experiment and use distilled or purified water for rinsing if available.

Ideas for experiments

- Use titration to test concentration of acetic acid in different brands of vinegar or cola drinks.
- Study of interaction between acids and alkalies e.g. indigestion tablets.
- Factors that affect rate of reaction - for example, with indigestion tablets does the temperature of the acid affect how fast it is neutralised, is it best to break the tablet into pieces? etc.

Additional uses

The adapter used with this pH probe can be used with Ion Selective Electrodes, for example Nitrates (part no. D100146) or as a mV sensor with the BNC to 4mm adapter (part no. D100072). See instructions supplied with the 'pH•ion•mV' adapter for more details.

- uLog pH electrode Part No D104045
- uLog USB pH, ion, mV Adapter Part No D104050
- Designed and Made in the UK by DCP Microdevelopments Limited www.logitworld.com