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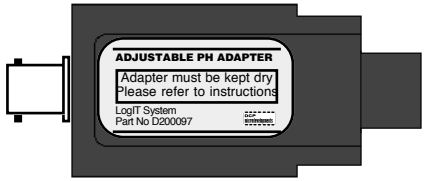
DH0300/096-1

Microsense® Adjustable pH adaptor for LogIT

DataMeter✓ LIVE✓ LogIT SL✓

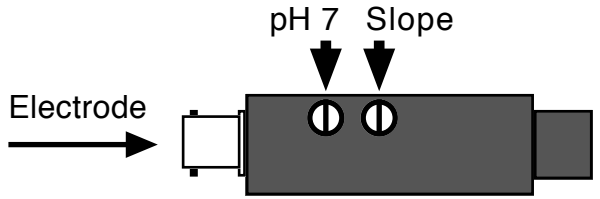


❑ Introduction

The Microsense Adjustable pH adapter works with most glass, plastic or industrial pH electrodes that are fitted with a standard BNC socket (an adapter for the older coaxial style of connector is available). The adapter has two point calibration being able to calibrate both the offset (such as buffer solution of pH 7) and the slope (using suitable buffer solutions such as pH 4 or 9).

(A fixed calibration pH Amplifier adapter is also available to allow simple monitoring of trends and change rather than absolute values).

❑ Adjustments



❑ Instructions for calibration & use

Ensure that the buffer solutions are used at their stated temperature as per their instructions - you can also always use a temperature sensor with the data logger when calibrating to ensure correct temperature is maintained (please note that this will not act as automatic temperature compensation).

To calibrate the adapter and electrode you will need either a data logger with a display (DataMeter 1000 or LIVE/LogIT SL with a CheckIT plugged in), or software which has a test facility that allows you to view the sensor readings before logging. After setting up calibration can be carried out :

- Place the electrode in a pH 7 buffer solution and use a small screwdriver to carefully adjust the pH 7.0 control until you have the correct reading.
- Rinse the electrode in distilled water but do not dry (pH electrodes should not be allowed to dry out).
- Place the electrode in a buffer solution either higher or lower than pH 7 (such as pH 2 or 4, pH 9 or 12) and carefully adjust the slope control with the same screwdriver until you have the correct reading for the solution.
- Rinse again but do not dry the electrode.
- Recheck the electrode with the pH 7 solution.
- Rinse again but do not dry the electrode.
- Check the electrode with all solutions again to ensure correct calibration.

After calibration for maximum accuracy and stability you should always keep the same electrode, adjustable amplifier and LogIT together. However, 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.

❑ Specification

Range:	0 to 14 pH
Resolution:	0.1 pH (some software 0.01 pH)
Accuracy (after calibration):	better than 0.1 pH
Adjustment range of pH 7 :	±1 pH
Slope/Temp adjust range:	85 - 105%

❑ Care

- The pH Adapter is not waterproof and care should be taken not to let liquid, dirt or steam get inside.
- The Adapter contains sensitive microelectronics which must remain protected from physical and electrostatic damage.
- Never dismantle the unit.
- Do not plug anything but standard pH electrodes into the adaptor.

Please refer to the instructions that came with your electrode for details on care and maintenance - pH electrodes do not last forever but looked after carefully should last several years. Recalibrate the adapter regularly for best accuracy.

❑ Experiment ideas

- Rates of reaction involving pH change e.g. souring of wine or yoghourt making
- Environmental monitoring
- Acid based titration
- Use the technique of titration to test concentration of acetic acid in different brands of vinegar or cola drinks
- Look into the effectiveness/stability of buffer solutions eg human blood pH must be between 7.35 and 7.45.
- Study of interaction between acids and alkalies e.g. indigestion tablets.
- Factors that effect 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.