

Overview

Multicolour indicator

Colour corresponds to the sensor channel on the computer screen and flashes when logging

BNC socket

Use with pH and Ion selective electrodes or use to measure voltage using test probes or adapters

Single button operation

Press once to start logging
Press again to mark events
Press & hold to stop logging



Locking bay

Locks to other uLog sensors

•Sensors can lock together



•Fit direct to stand



•Cable storage



Easy USB sensing and datalogging

Getting started with uLog

1 Insert the CD and install SensorLab

(see last page for more information)



2 Run SensorLab and plug your uLog sensor into a free USB port

You should see live readings from your sensor on the screen



3 Press the uLog button to start logging

You should see a graph recording your live readings

4 To mark an event, press the button again

You will add a small arrow marker at the top of the graph



5 To stop logging, press and hold the button

Your graph will show the complete set of data

Congratulations, you have recorded your first sensor data using uLog!

More with SensorLab

You can use SensorLab to do much more than display live readings and a graph. Just hover the pointer over any icon to see what it does. Full details of all SensorLab functions are in the comprehensive user guide on the CD - here are a few of the extra features you can explore:

- **Change range or calibration of a sensor:** Click the icon above the gauge when you start
- **Change logging type: SensorLab defaults to automatic logging**
- **Switch a sensor display on or off:** Click on gauge display or when graphing click on tick
- **Zoom in on a graph:** Draw a box around where you wish to zoom or click Magnifier icon
- **Take precise readings from graph:** Click on graph & position cursor with mouse or arrows
- **Label different points on the graph:** Click **IA** icon or Graph / Annotate
- **Change SensorLab complexity level:** Click level icon bottom right of screen to increment
- **Find information about the experiment:** Click on the *i* icon
- **To print graph:** Click on the Printer icon or select menu File / Print menu
- **Save SensorLab file onto your computer:** Click Disc icon or use File / Save As menu
- **Export data in a different format for use in another program or share:** File / Export menu

Using multiple uLog sensors

You can connect several uLog adapters and sensors to the same computer for multi channel logging on the same graph. The multicolour LED on each uLog will show which sensor is displayed on which channel (especially useful if using several sensors of the same type). Note that the number of uLog sensors you can use is dependant on the computers processing power, number of USB ports available and the USB power available (particularly limited on smaller computers). Use a high quality **powered** USB hub to increase both number of USB ports and power capacity. You can move uLog sensors further away from the computer by using a USB extension cable.

Other SensorLab functions

As well as graphs, SensorLab can also display data from some sensors in different ways.

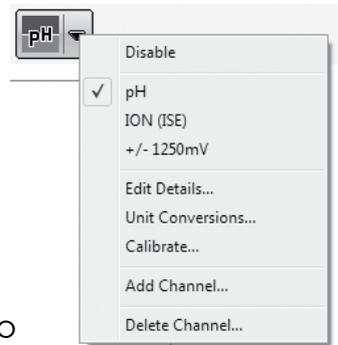
Oscilloscope: Some analogue sensors which respond quickly (such as sound, light, voltage) can be also displayed as a live oscilloscope waveform on your computer screen - to view the output of a sensor as a waveform click the oscilloscope icon on the home screen. You can also store and transfer the screen data onto the normal graph for later analysis.

Setup: The setup icon on the home screen (cog wheel) enables you to change the types of logging. You can also select Timing from this option to use with sensors such as Light Gates etc. Full details of the scope & all SensorLab functions are in the comprehensive user guide on the CD.

Selecting an appropriate scale

You can use this uLog adapter to measure many different things and so you can also select different scales to best suit what you are measuring.

To select your scale, start SensorLab software, connect the uLog adapter to the computer, click on the arrow above the sensor then select scale.



The BNC connector

A BNC socket is fitted to this adapter because this is the accepted standard for most electrodes and probes. To make secure connection you first need to align the 'pips' between plug & socket, push and then twist clockwise until it clicks into place.

Measuring pH using a pH electrode

You can use the specially designed uLog plug-in pH electrode which plugs straight in (D104045 see overleaf) or a regular pH electrode and then select the pH scale as described above.

It is a good idea to calibrate the electrode periodically. For detailed instructions on calibration and suggested experiments, refer to the instructions supplied with your electrode.

When using the uLog pH electrode ensure the electrode is fitted securely to the BNC socket and do not submerge past the clear resin section as it is only waterproof up to the metal sleeve.



Measuring using an Ion Selective Electrode

The LogIT Ion Selective combination Electrode range are maintenance free solid state electrodes designed for the detection and analysis of ions in aqueous solutions and are suitable for use in the field and in the laboratory. They are fitted with a BNC plug which connects to this uLog adapter. Simply select the 'ION (ISE)' scale as shown at the top of this page.

The electrodes require careful setup and calibration. Failure to do so will lead to varying degrees of accuracy and errors in recorded data. It is very important that the operating instructions and quick guide supplied with the Electrode are read very carefully.

Available electrodes currently include Ammonium, Bromide, Chloride, Fluoride, Nitrate & Sulphide Ion selective electrodes and Redox in the LogIT range - contact your LogIT dealer for more information and prices.

Measuring Voltage

This adapter measures voltage in the range +/- 1250 mV and is sensitive enough to record small induced electric currents such as those found when a magnet is passed through a coil. You can either connect direct to the adapter using a probe with a BNC plug such as an oscilloscope probe, or use a BNC to 4mm adapter for easy connection to standard 4mm test cables (BNC to 4mm adapter available from DCP and LogIT dealers - see overleaf).



Note that the input is not isolated or 'floating' and so is electrically linked to other uLog adapters or sensors and your computer via the USB connection which may also link to other equipment via mains supply earth. Hence, take special care to consider this if measuring on other equipment which is also connected to the mains or computer. For best results, attached equipment should be supplied independently by battery or use passive devices such as the coil shown.

Please note exceeding +/- 1.25V will seriously damage the adapter and will void the warranty.

To measure an induced electric current when a magnet is dropped through a coil, you can use the 'Fast with trigger' option under 'Setup' in SensorLab. This can record very fast events as it only records data as the magnet is dropped through the coil. Remember to protect yourself by using a cloth or similar to catch the falling magnet.

The Oscilloscope function can also be used, allowing the induced current waveform to be observed. Select 'Oscilloscope' in SensorLab.

