pH Calibration

Calibration Frequency:

pH Sensors (Endress and Hauser CPS11) are required to be calibrated on a 3 monthly basis. They have a maximum validation period of 6 months from the time of calibration.

Calibration Procedure:

A pH and Conductivity Calibration Log Sheet (section 11.22 Appendix 1) needs to be completed for each calibration.

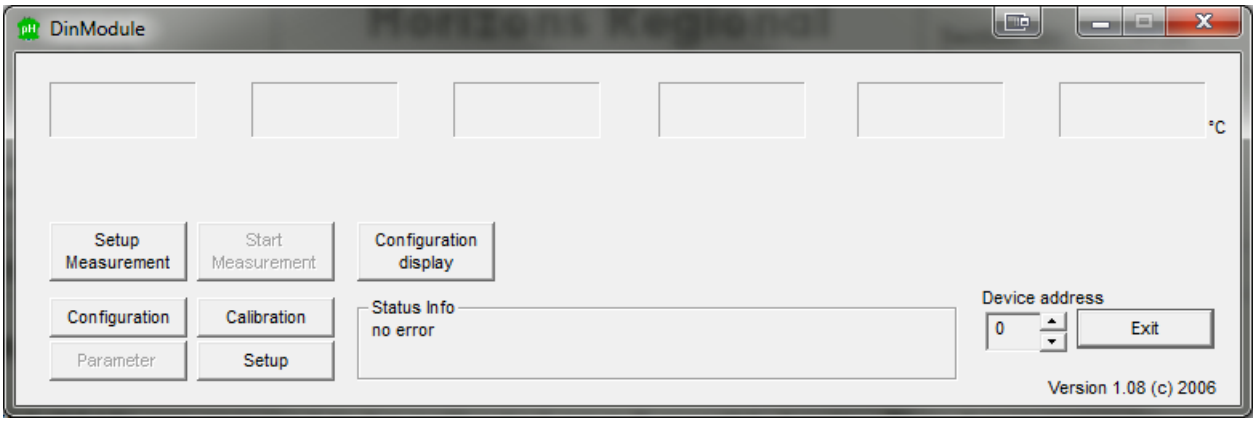
A calibrated handheld meter needs to be used when calibrating a pH sensor.
Acceptable handhelds to use are

- YSI Professional Plus
- YSI 556

The handheld meter to be used needs to either be calibrated before leaving the office, or at the site (before calibrating the site instrumentation). Standard calibration procedures for handheld meters must be followed (section 14.2), using verified calibration standards.

DinModule Setup

Connect the pH transmitter using a serial to RS232 cable. Start up the DinModule software.



If the device address of the transmitter is unknown, *255* should be used.

Before any readings can be shown you need to click on “setup measurement”, and save the file as “default”.

The layout of DinModule changes depending on what transmitters are connected. For pH transmitters DinModule will appear as

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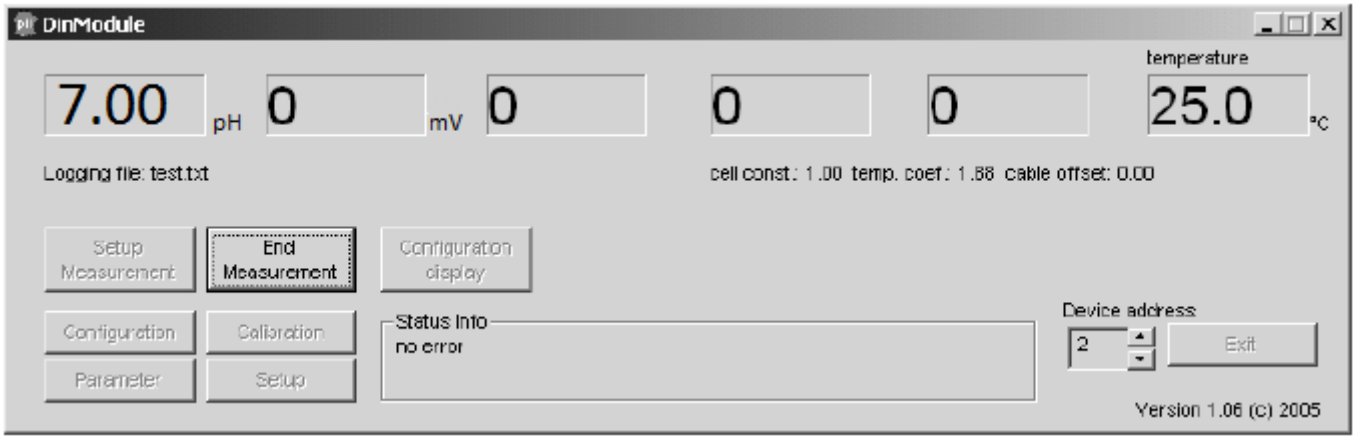
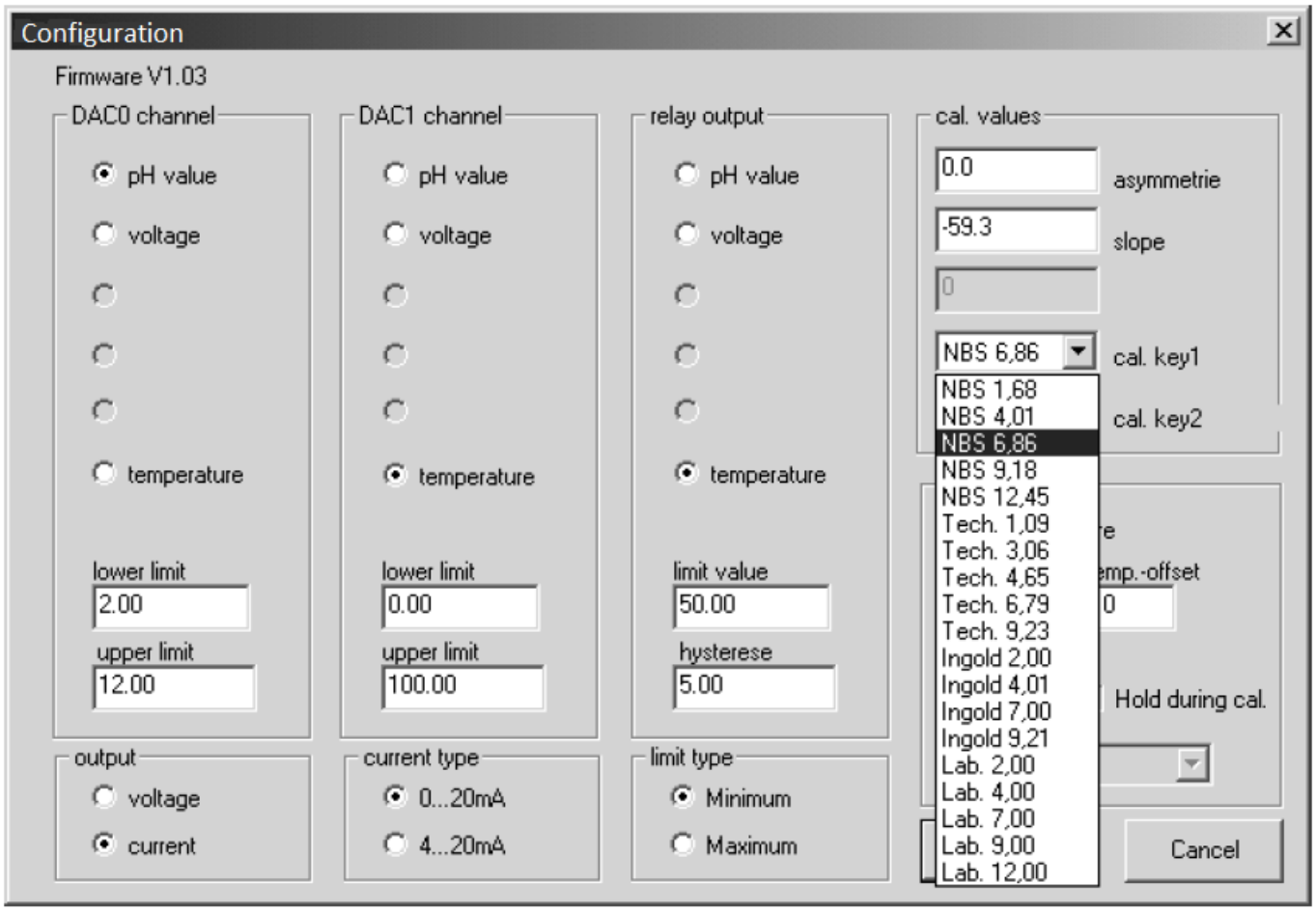
pH Calibration



Configuration using DinModule. Using the screen shown (below) configuration parameters can be changed according to specific needs. The correct pH standards need to be selected using the drop down lists for Cal Key1 and Cal Key2. Lab 4.00 and Lab 7.00 should be selected. These are the nominal values at 25°C (as temperature relationships are already recognised).



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pH Calibration

Pre-Calibration check

Pre-calibration checks must be carried out onsite using both the site instrument and the handheld meter; at the same time, using the same solution (if possible). The following readings need to be recorded

- Time
- Barometric Pressure (mbar)
- Temperature °C
- Dissolved Oxygen %
- Dissolved Oxygen mg/L
- Specific Conductivity (µS/cm)
- pH

Recordings need adequate time to settle. The YSI should be in the river for no less than 10 minutes before the first readings are taken. Site and YSI readings need to be taken at the 15 minute punch (ie xx:00, xx:15, xx:30 or xx:45).

Two Point Calibration

Calibration using DinModule. The calibration function of DinModule is a guided step by step process. By pressing the calibration button on the main screen you will first be prompted to put the sensor in the first pH buffer solution (pH 4).

Logger values should be checked at the same time as DinModule. To do this, you must have your laptop connected to both the sensor and the site logger; at the same time.

Once you have immersed the sensor and the reading is stable push the “OK” button. You will be prompted to enter the value of the buffer solution at this point.

Once this has been completed the sensor should be washed thoroughly with deionised/distilled water before being put into the second buffer solution (pH 7).

Values for each solution must be recorded before and after calibration from both the transmitter and the logger.

Post Calibration Check

The post-calibration check needs to be a comparison between the site (running normally) and the YSI (in the river). The following readings need to be recorded

- Time
- Barometric Pressure (mbar)
- Temperature °C
- Dissolved Oxygen %
- Dissolved Oxygen mg/L
- Specific Conductivity (µS/cm)
- pH

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pH Calibration

Recordings need adequate time to settle. The YSI should be in the river for no less than 10 minutes before the first readings are taken. Site and YSI readings need to be taken at the 15 minute punch (ie xx:00, xx:15, xx:30 or xx:45).

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