Conductivity Calibration

Calibration Frequency:

Conductivity Sensors (MV3025) 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.

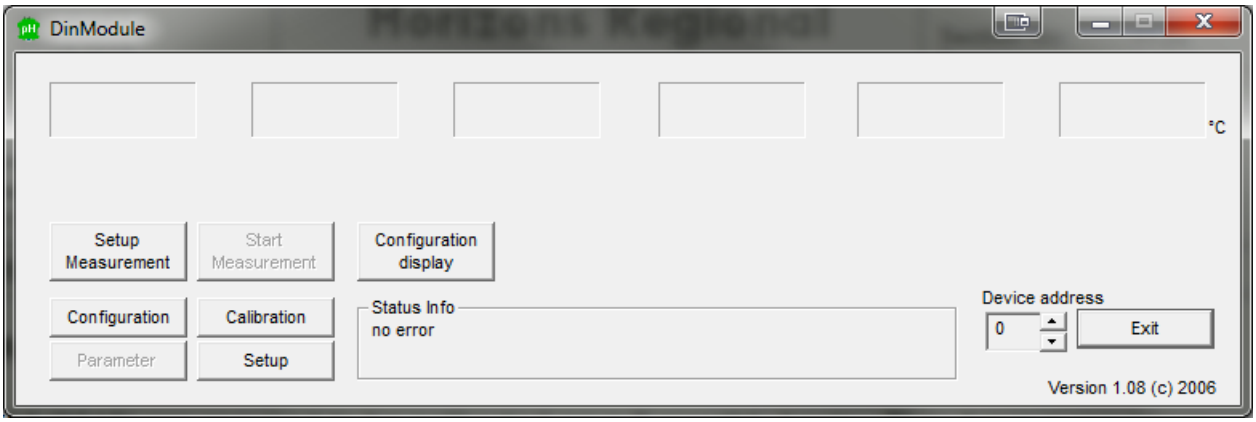
A calibrated handheld meter needs to be used when calibrating a conductivity sensor.
Acceptable handhelds to use are

- 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 conductivity 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 conductivity transmitters DinModule will appear as

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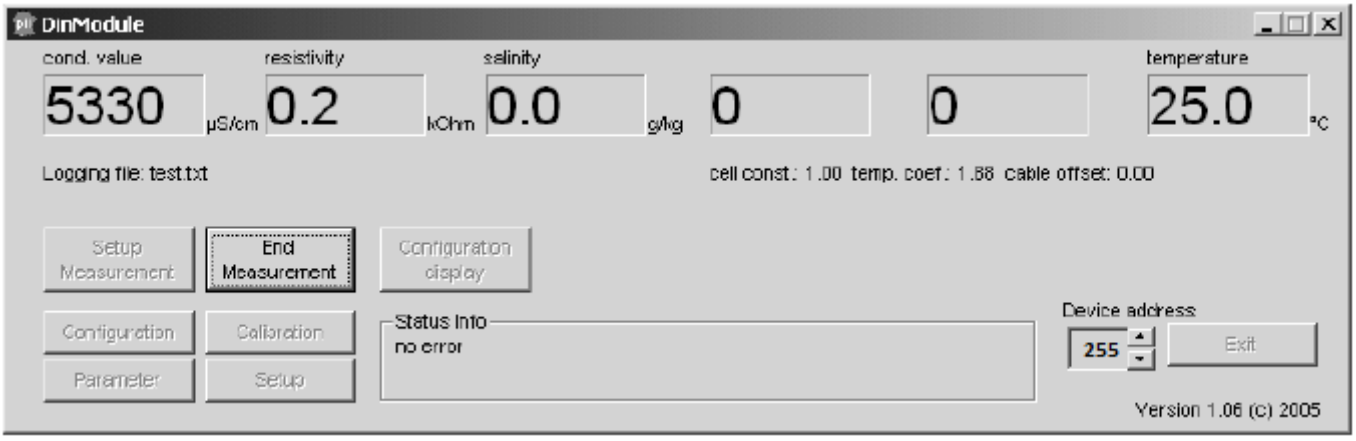
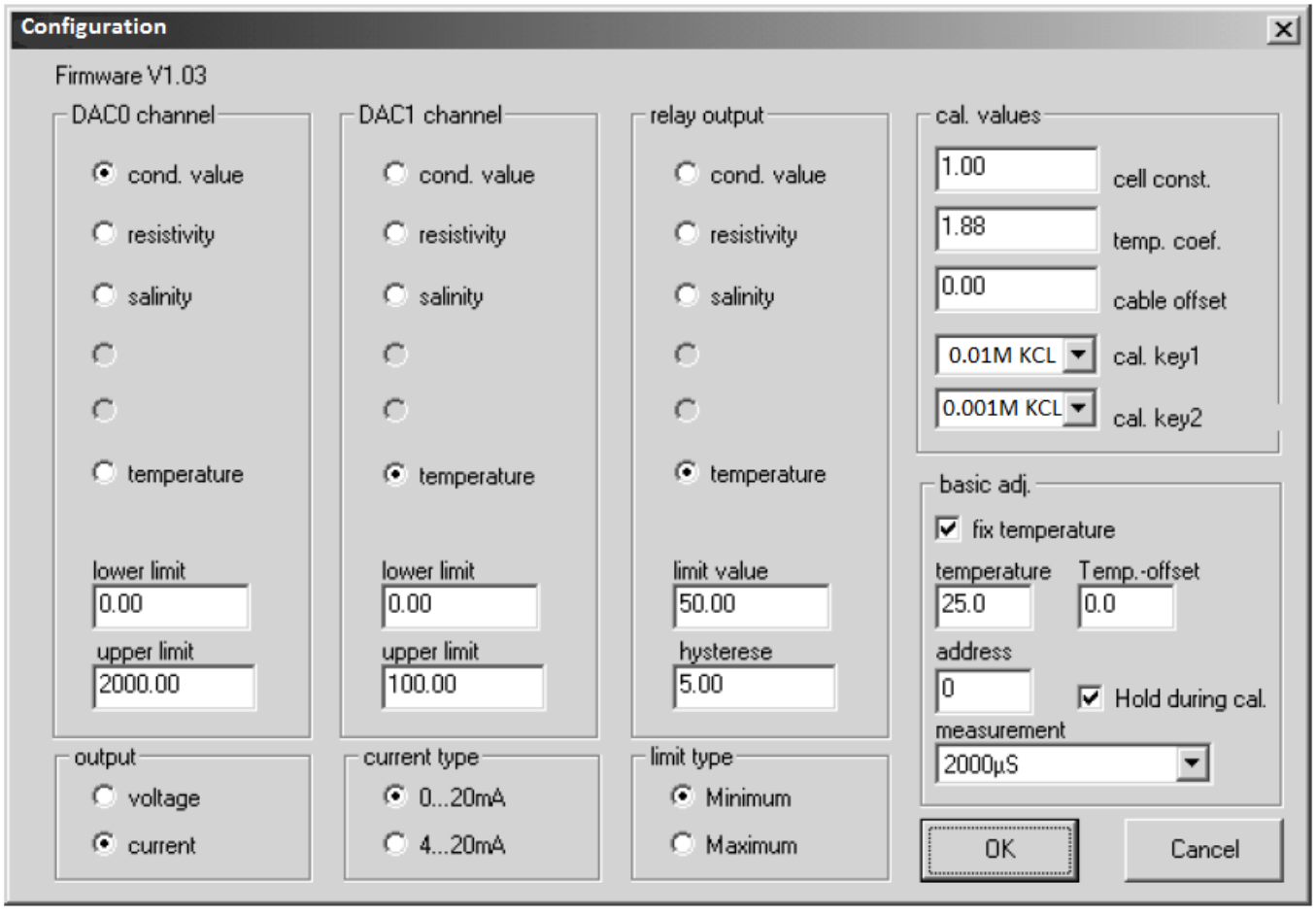


Configuration using DinModule. Using the screen shown (below) configuration parameters can be changed according to specific needs. The correct conductivity standards need to be selected using the drop down lists for Cal Key1 and Cal Key2. 0.001m KCL (approx. 148µs) and 0.01m KCL (approx. 1412µs/cm) should be selected. These are the nominal values at 25°C (as temperature relationships are already recognised).



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Pre-Calibration check

Pre-calibration checks must be carried out onsite using both the site instrument and the handheld meter. The pre-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

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).

Single Point Calibration with check

Calibration using DinModule. The calibration function of DinModule is a guided step by step process. First you must undertake a *Check* of the conductivity readings by submerging the transmitter in a 0.001m KCL (approx. 148µs) solution and recording the readings from both the transmitter and the logger. Calibration is then undertaken by pressing the calibration button on the main screen; where you will be prompted to put the sensor in the calibration conductivity 0.01m KCL (approx. 1413 µS) solution.

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 conductivity solution at this point.

Once the calibration has been completed an after-calibration *Check* must be completed by submerging the transmitter in a 0.001m KCL (approx. 148µs) solution and recording the readings 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

Conductivity 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).