Calibrating the common I/O using loop calibrator.

Tools needed

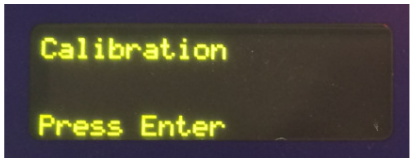
- 1 loop calibrator.
- Know Resistor values of (if calibrating Temperature):
  - 104 Ω (10°C)
  - 138 Ω (100°C)
- Terminal screwdriver

Method

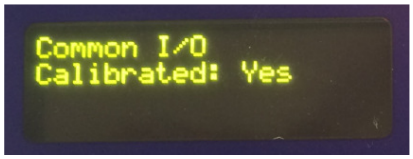
1. On the spectra 2 membrane, scroll through the menus to **Setup Menu**, press and hold clear button and enter password **U L T R A**.



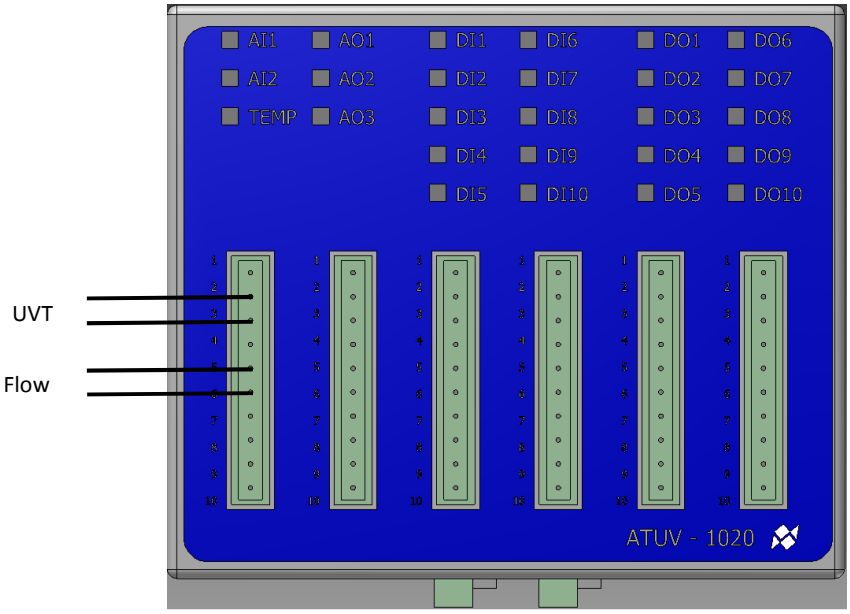
2. Scroll through the setup menus and enter the **Calibration** menu by pressing enter**.**



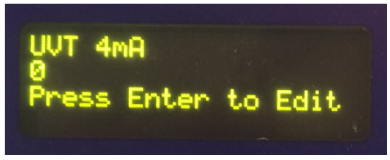
3. Once in this menu scroll through again until the screen displays **Common I/O Calibrated** (it will display Yes or No) press enter to enter the calibration procedures.



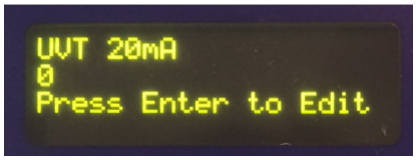
4. Firstly the analogue inputs will need calibrating (UVT, Flow, RTD Temp). To calibrate **UVT** ensure the loop calibrator is connected into terminals 2 and 3 on the first header on the left on the common I/O (ATUV-1020). When calibrating **Flow** make sure the loop calibrator is connected to terminals 5 and 6.



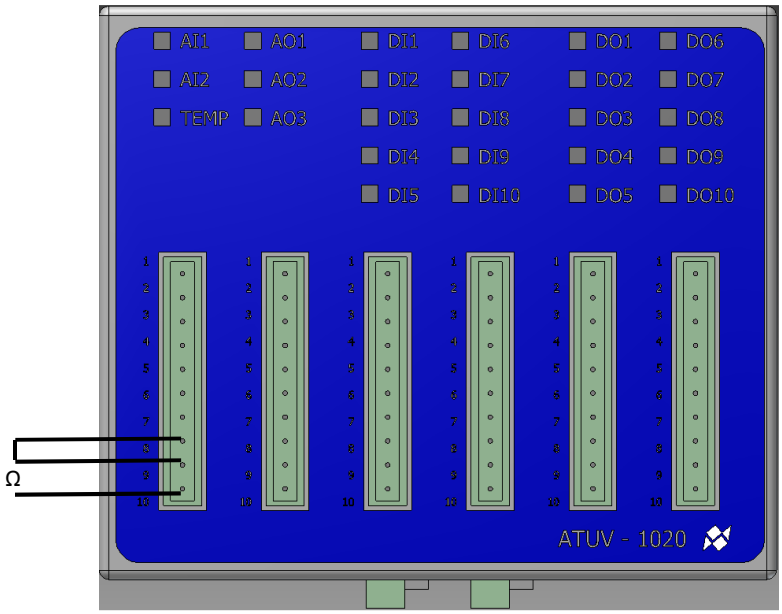
5. Scroll down to **UVT 4mA / Flow 4mA** and press enter (***** appears). Source in 4mA from the loop calibrator. The number on the screen should change to around 600+. Press Enter to confirm this number (***** disappears).



Scroll down to **UVT 20mA / Flow 20mA** and press enter (***** appears). Source in 20mA from the loop calibrator. The number on the screen should change to around 3000+. Press Enter to confirm this number (***** disappears).

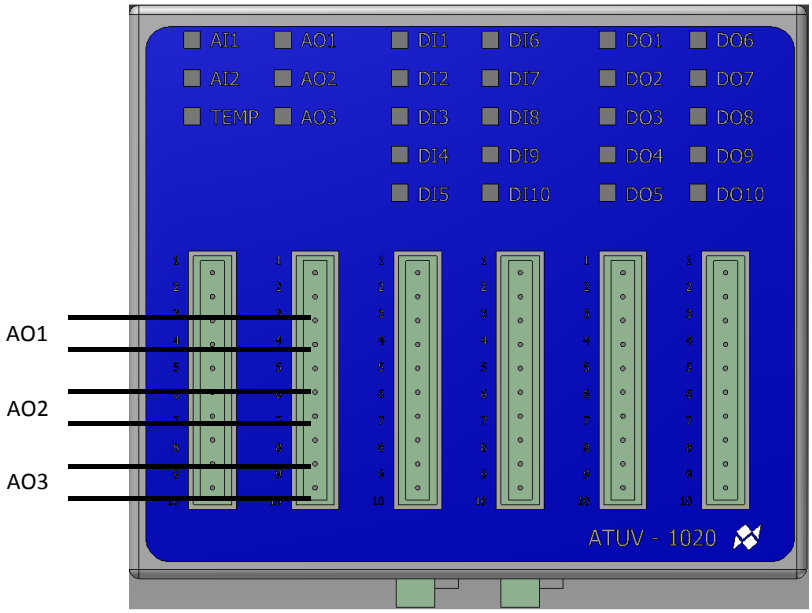


6. The connections for calibrating the temperature are 8, 9 and 10 on the first header, this is done by linking terminals 8 and 9 together and putting a resistor across 9 and 10. Calibrating the RTD temperature can be done using resistors rated at 138Ω= 10° and 104Ω= 10°.

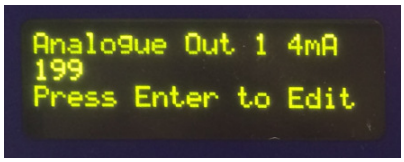


Alternatively, the other way of calibrating the temperature is by manually entering the values through the spectra. These values are approximately 2281= 10° and 3045= 100°.

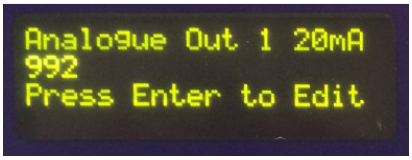
7. Next the analogue outputs will need calibrating (Analogue Out 1, 2 and 3). **Analogue output 1** is terminals 3 and 4 of header 2, **Analogue output 2** is terminals 6 and 7 of header 2 and finally **Analogue output 3** is terminals 9 and 10 of header 2.



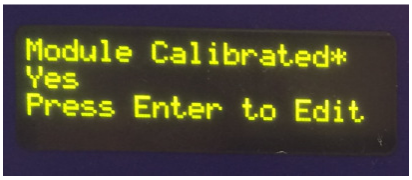
8. Scroll down to **Anologue Out # 4mA** and press enter (***** appears). Set the Loop calibrator to measure. Start altering the number on the Spectra. Press enter to confirm number (***** disappears) until 4mA can be read from the loop calibrator. The number on the screen should change to around 200+.



9. Scroll down to **Anologue Out # 20mA** and press enter (***** appears). Set the Loop calibrator to measure. Start altering the number on the Spectra. Press enter to confirm number (***** disappears) until 20mA can be read from the loop calibrator. The number on the screen should change to around 1000+.



10. Once this is done scroll down to the **Module Calibrated** screen. Press enter (* appears) Enter and select **Yes** press enter and the calibration is saved. (If the Yes is already selected, enter it again to confirm any calibration changes).



11. Press clear now until you get back to the **Dose & Flow** Screen.