Calibration of VN202 Oxygen Analyser

1. The VN202 Oxygen analyser is in two parts
    a. The sensor:
        i. This has a voltage output of 10.5mV in Air at Sea level +/- 30% In 100% Oxygen the output should be 50mv +/- 30%
    b. The VN202 instrument is an accurate digital voltmeter
        i. Input zero reading should be zero
        ii. Input 100mV reading should be 100
        iii. The resolution is 0.1% or 0.1mV The accuracy of the electronics should be +/- 0.2 mV.
2. **Calibration and Zero Check**
    a. With sensor disconnected.
    b. Switch on
    c. Reading should be less than +/- 0.5mV. Under 0.5 the accuracy is not impaired.
    d. Above 0.5 the accuracy could start to be affected particularly if the instrument is calibrated in air and used to measure above 50%.
    e. Solution. The case needs to be opened and the potentiometer reset to 0+/- 0.1%
3. **Electronic Calibration**
    a. Use a calibrated voltage source.
    b. Set to 50 mV
    c. Adjust external Calibration potentiometer until reading is 100%
    d. Set to 10.5mV
    e. The reading should be 20.9% _/- 0.2%
4. **Gas Calibration**
    a. In 100% Oxygen
    b. Adjust external Calibration potentiometer until reading is 100%
    c. Remove flow divertor and allow to rest in Air for 5 minutes (can be speeded up by gently waving the sensor through the air or using air from a cylinder.
    d. The reading should drop to 20.9% _/- 0.5%
    e. The small discrepancy is due to Oxygen becoming trapped in the sensor. It will eventually reduce.
    f. Do not use flowing gas as this will distort the reading and may have a temperature effect on the sensor. (a slowly rising reading)