

# Limitations of Calibration of VN202 mkII

The display is a four digit read out.

The range is 0-100%

The resolution is  $\pm 0.1\%$

Accuracy for the system is quoted as  $\pm 1.0\%$

Initial limitations 0.1 error at 20 equates to a 0.5 error at 100

The potentiometer has been chosen for reliability but is extremely sensitive when setting to 0.1.

This is not a problem on an analyser with a  $\pm 1\%$  specification.

The device is totally software controlled so the electronics cannot be inaccurate

If it works it will be within specification unless the sensor is inaccurate. Therefore a quick electronic 20% 100% check is adequate.

## Electronic Calibration equipment



The VN202 mkII is designed to work in conjunction with an Oxygen sensor.

Dry Oxygen = 100%

Dry Air = 20.9%

Ratio is 4.7846

The Microcal and the Digital Voltmeter are calibrated and traceable to Namas.

The Microcal is set to 10mV as near as possible. The VN202 calibration is adjusted to 20.9% as near as possible

The Microcal is set to 47.846 and the VN202 should read 100.0

There will always be an error in setting the Microcal and the VN202 accurately below 1%

## Final test of VN202 mkII before despatch

It is usually sufficient to add an Oxygen sensor and to check it can be set to 20.9%.

Other tests are superfluous.

However a calibration certificate can be supplied on individual units on request before despatch

In this instance the unit can be electronically tested with an Oxycal VM3COP40.17 (a simplified calibrated voltage generator) to 20.9% & 100%.

The complete instrument and sensor combination can also be calibrated in Dry Air & 100% Oxygen.

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