Pressure

The model 418 N_2Oi instruments measure impurities in N_2O. This means that for zero impurities the instrument will be measuring 100% N_2O. This makes the instrument particularly susceptible to changes in barometric pressure. Typically a change of 10mb will cause an uncompensated zero shift of 1% N_2Oi.The instrument has a pressure compensation circuit that subtracts a signal, (derived from an absolute pressure transducer attached to the vent side of the sample cell), from the gas signal. The pressure transducer signal is set for a zero output during factory calibration. It will then provide an output proportional to barometric pressure changes. This signal may be measured across TP21 (+V) and TP8 (0V) on the PA0428PCB (fitted above the card frame) adjacent to the pressure transducer.

Care should be taken when venting the instrument. Backpressure created here can affect the stability and accuracy of the instrument.

Flow

The instrument has been calibrated and linearised at a flow rate of 600cc/min. For optimum performance all flows into the instrument (zero, span and sample) should be controlled to this level.
The Model 418 N_2Oi analysers flow configuration has been modified to allow the flow rate of gas through the analyser to be controlled by an external flow controller. The rear panel has two extra bulkheads that take the gas from flow path to the external flow controller. The external flow controller is fitted down stream of the gas selection valves (sample, zero and span) and sample filter, but before the analysis cell. The flow controller will adjust the flow when sampling either sample, zero or span gas. When the external flow controller is not used a link must be fitted between the two bulkhead connections.

External Purge

The instrument requires an external purge of Nitrogen. This should be set to 0.5 bar.
The purge flow is set to 75cc internally using a needle valve.

Temperature

The case temperature is controlled to approximately 33^{o}C. If the lid is removed allow 1 hour for the unit to re-stabilise. On initial start-up allow at least 4 hours for the unit to stabilise before trying to calibrate and use the unit (we recommend that the unit is left to run overnight if possible).