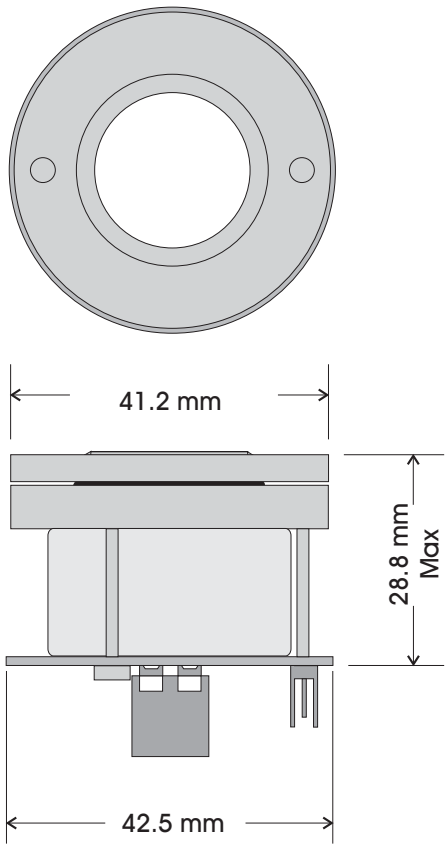
T7OX-V 4-20mA Transmitter

Performance Characteristics

Sensor Type Used	7OX-V
Range	0-25% Oxygen
Expected Operating Life	Two years in air
Resolution	0.1%
Temperature Range	-20°C to +50°C
Pressure Range	Atmospheric ± 10%
Pressure Coefficient	0.02% signal/mBar
T_{95} Response Time	≤15 seconds
Relative Humidity Range	0 to 99% non-condensing
Long Term Output Drift	<5% signal loss/year

N.B. All performance data is based on conditions at 20°C, 50%RH, and 1013mBar

Outline DImensions



Electrical Characteristics

Output	4-20mA d.c.
Power Supply Required	10 to 35V d.c.
Calibration	Via built-in span potentiometer
Output Impedance	15MΩ

Physical Characteristics

Weight	approx. 120g
Position Sensitivity	None
Storage Life	Six months in CTL container
Recommended Storage Temperature	0-20°C
Warranty Period	24 months from date of despatch (This amounts to a variation of condition 6 of our standard terms and conditions which otherwise apply)

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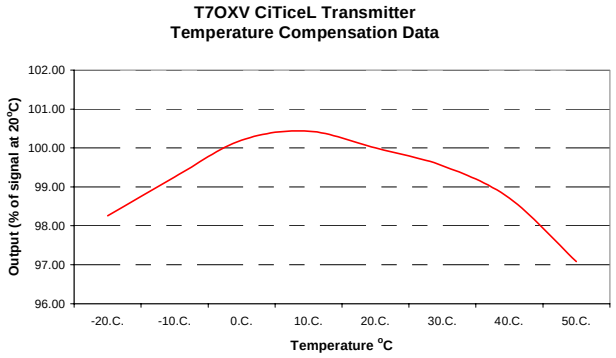
Temperature Behaviour

1) Gradual changes

Oxygen 4-20mA Transmitters are compensated to minimise the variation in output with gradual changes in temperture. The mean compensated output of a batch of transmitters at a number of temperatures is shown to the right, expressed as a percentage of the signal at 20°C.



2) Sharp fluctuations

A transient response will occur with sharp fluctuations in temperature. For rapid increases in temperature there is a sharp drop in sensor output, and a sharp increase in output for rapid decreases. These responses are transient and should die away in about 20 seconds.

Linearity

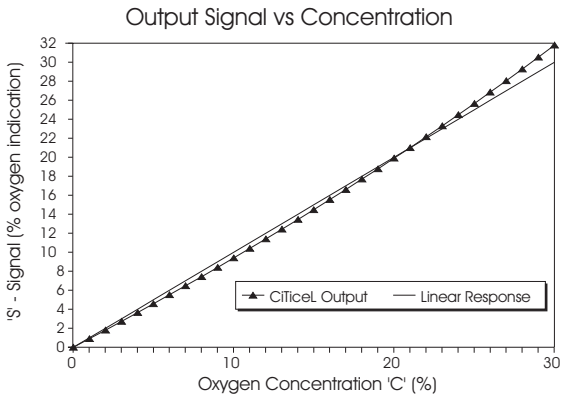
The output signal of an Oxygen CiTiceL follows the relationship:

$$S = K \log_e 1/(1-C)$$

where:

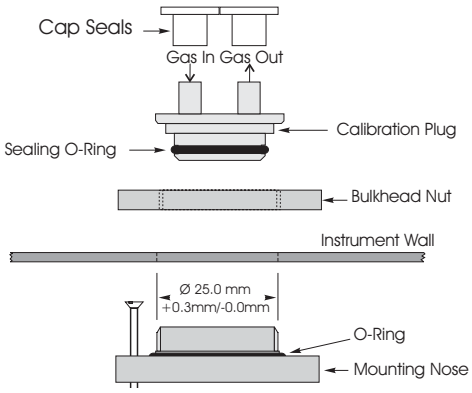
S = Output signal;
C = Fractional oxygen concentration;
K = a constant for the sensor.

For most applications the deviation from a linear response will be insignificant, and no compensation needed. For example, the graph below shows the output of a sensor calibrated in air (20.9% O_2). In this case the maximum error in the 0-25% range is »0.5% at around 10% O_2.



Mounting

A diffusion mounting assembly, the "nose" adaptor, is supplied with CiTiceL transmitters for convenient mounting in a wide range of weatherproof housings. It also features a plug for easy zeroing and exposure to calibration gas and a bonded membrane and mesh to prevent dirt and dust particles reaching the sensor.



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