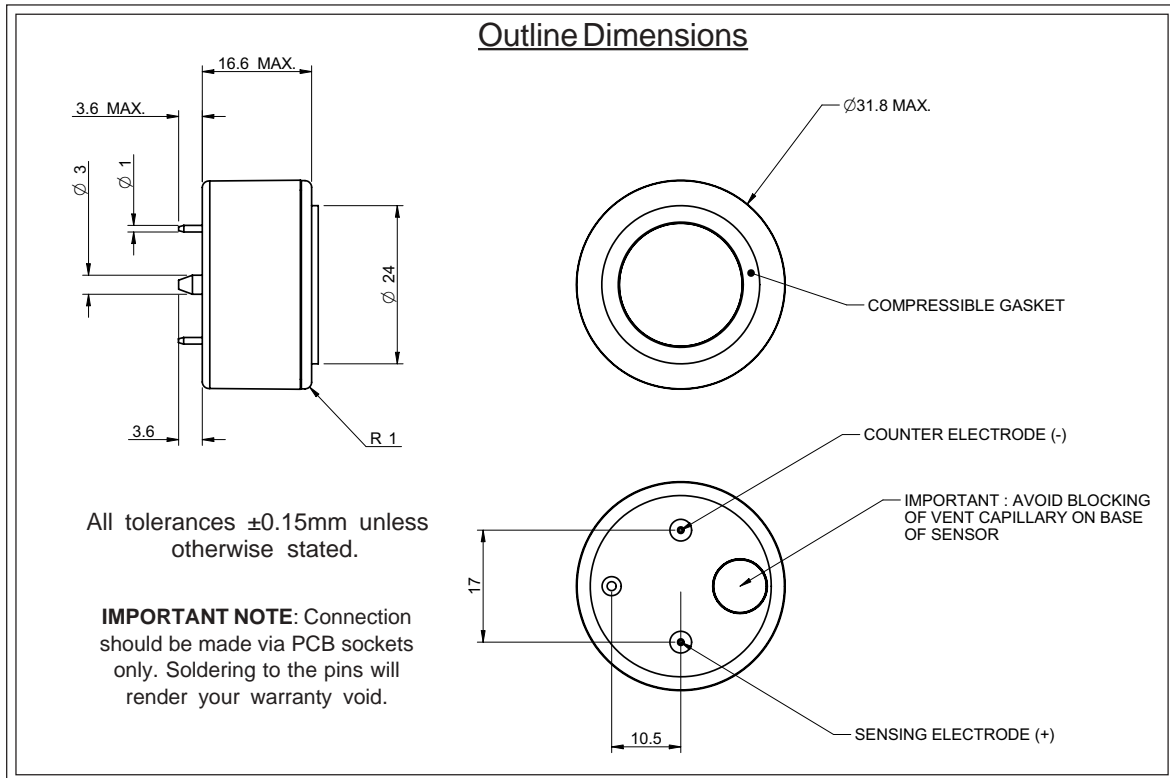


## Oxygen CiTiceL<sup>®</sup> Specification



# 70X-V CiTiceL<sup>®</sup>



### Performance Characteristics

<b>Nominal Range</b>	0-25% Oxygen
<b>Max Overload</b>	30% Oxygen
<b>Expected Operating Life</b>	Two years in air
<b>Output Signal</b>	0.195 - 0.25mA in air
<b>T<sub>95</sub> Response Time</b>	≤15 seconds
<b>Offset (3mins N<sub>2</sub>)</b>	<0.5% O <sub>2</sub>
<b>Temperature Range</b>	-20°C to +50°C
<b>Temperature Coefficient</b>	0.2% signal/°C
<b>Absolute Pressure Range</b>	Atmospheric $\pm 10\%$
<b>Differential Pressure Range</b>	0 to 40mBar max
<b>Pressure Coefficient</b>	<0.02% signal/mBar
<b>Operating Humidity intermittent</b>	0 to 99% RH non-condensing
<b>continuous</b>	15 to 99% RH non-condensing
<b>Long Term Output Drift</b>	<5% signal loss/year
<b>Recommended Load Resistor</b>	100Ω

### Physical Characteristics

<b>Storage Life</b>	Six months in CTL container
<b>Recommended Storage Temperature</b>	0-20°C
<b>Warranty Period</b>	24 months from date of despatch (This amounts to a variation of condition 6 of our standard terms and conditions which otherwise apply)

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

# Oxygen CiTiceL<sup>®</sup> Specification



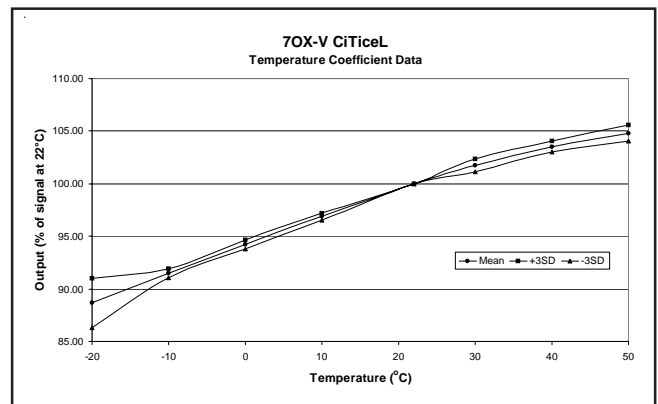
## Temperature Behaviour

### 1) Gradual changes

The output of a 7OX-V CiTiceL varies slightly with gradual temperature changes. The behaviour of a batch of 7OX-V sensors is shown opposite. Output was measured at a range of temperatures and expressed as a percentage of the signal at 20°C. The graph shows the mean signal and three times standard deviation.

### 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

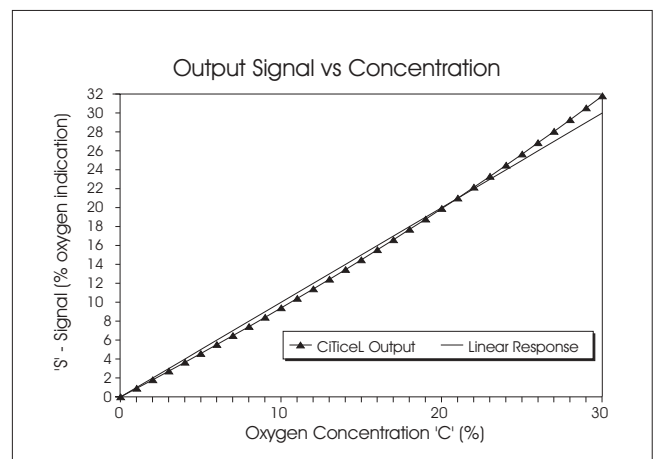
The output signal of an Oxygen CiTiceL follows the relationship:

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

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<sub>2</sub>). In this case the maximum error in the 0-25% range is »0.5% at around 10% O<sub>2</sub>.



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Performance characteristics on this data sheet outline the performance of newly supplied sensors. Output signal can drift below the lower limit over time.