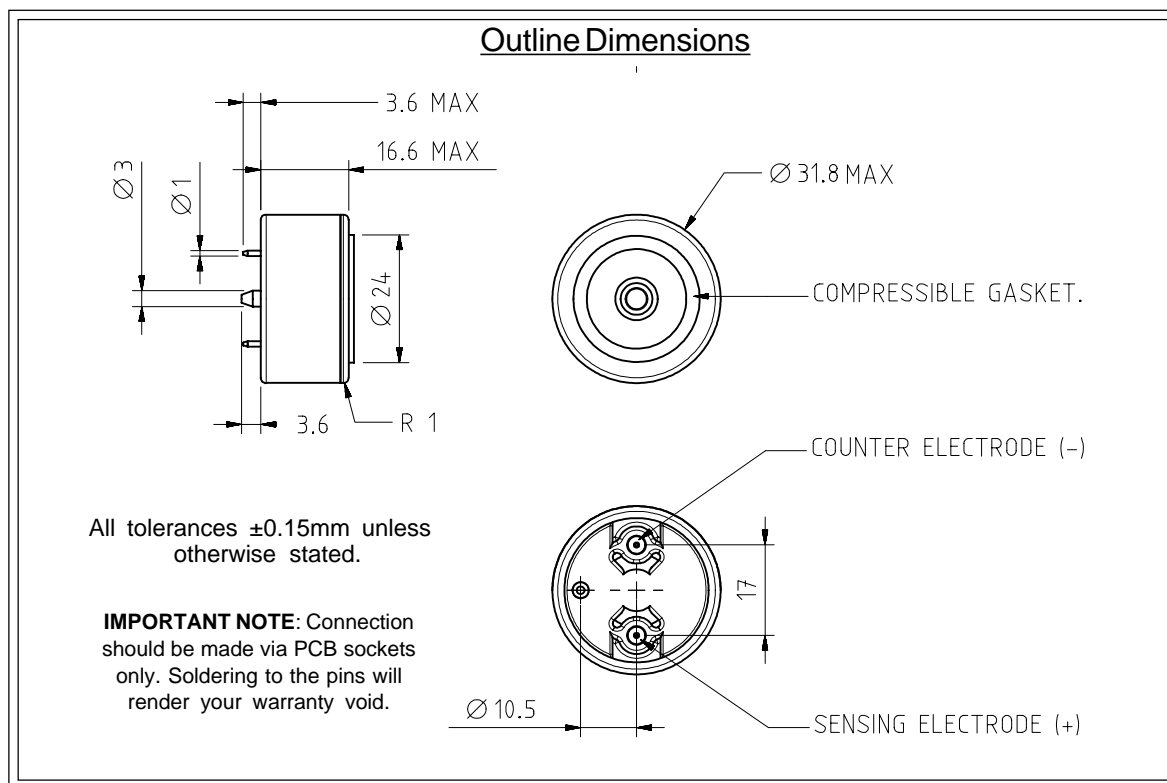


# 70X CiTiceL<sup>®</sup>



## 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>	$0.25 \pm 0.03\text{mA}$ in air
<b>T<sub>95</sub> Response Time</b>	$\leq 15$ seconds
<b>Temperature Range</b>	$-20^{\circ}\text{C}$ to $+50^{\circ}\text{C}$
<b>Temperature Coefficient</b>	0.2% signal/ $^{\circ}\text{C}$
<b>Pressure Range</b>	Atmospheric $\pm 10\%$
<b>Pressure Coefficient</b>	$< 0.02\%$ signal/mBar
<b>Operating Humidity</b>	0 to 99% RH non-condensing
<b>Long Term Output Drift</b>	$< 5\%$ signal loss/year
<b>Recommended Load Resistor</b>	100 $\Omega$

## Physical Characteristics

<b>Storage Life</b>	Six months in CTL container
<b>Recommended Storage Temperature</b>	$0-20^{\circ}\text{C}$
<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)

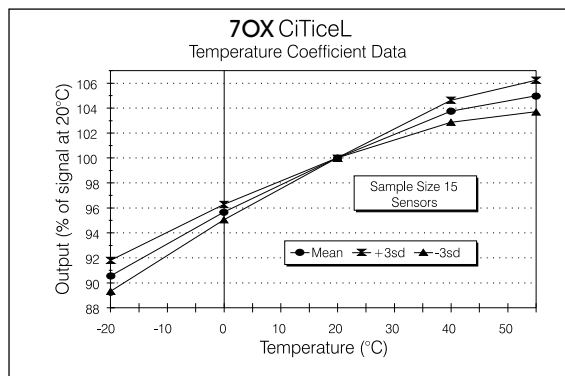
## Temperature Behaviour

### 1) Gradual changes

The output of a 7OX CiTiceL varies slightly with gradual temperature changes. The behaviour of a batch of 7OX sensors is shown below. 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:

$$S = K \log_e \frac{1}{1-C}$$

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>.

