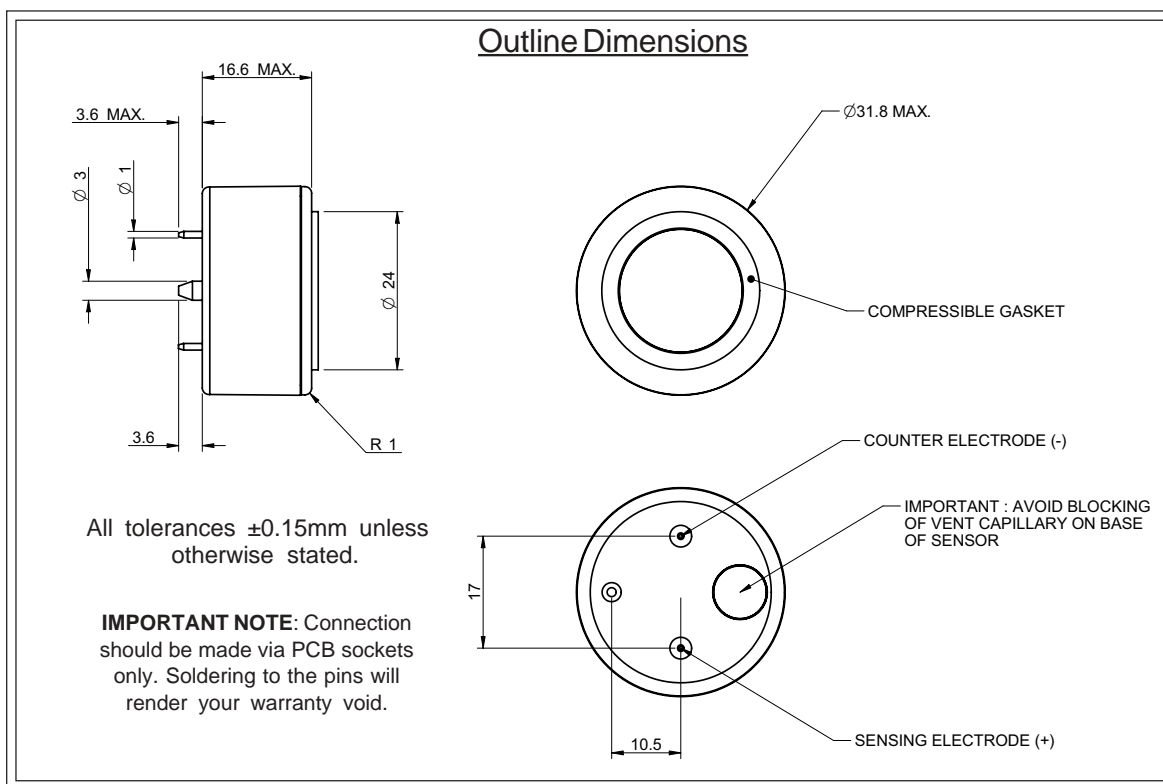


Oxygen CiTiceL<sup>®</sup> Specification70X-V CiTiceL<sup>®</sup>Performance Characteristics

|  |                             |
|--|-----------------------------|
| <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>    | $\leq 15$ 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>       | 100 $\Omega$                |

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<br>(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



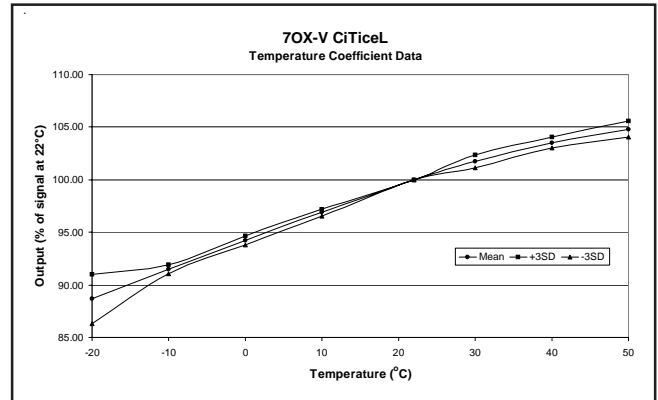
## Temperature Behaviour

### 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

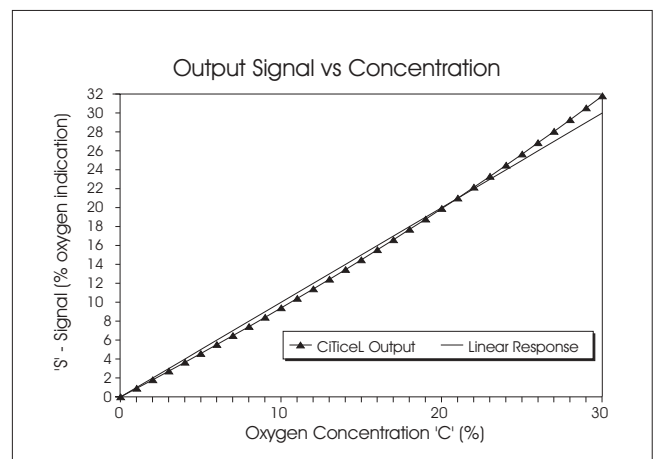
The output signal of an Oxygen CiTiceL follows the relationship:

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

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.