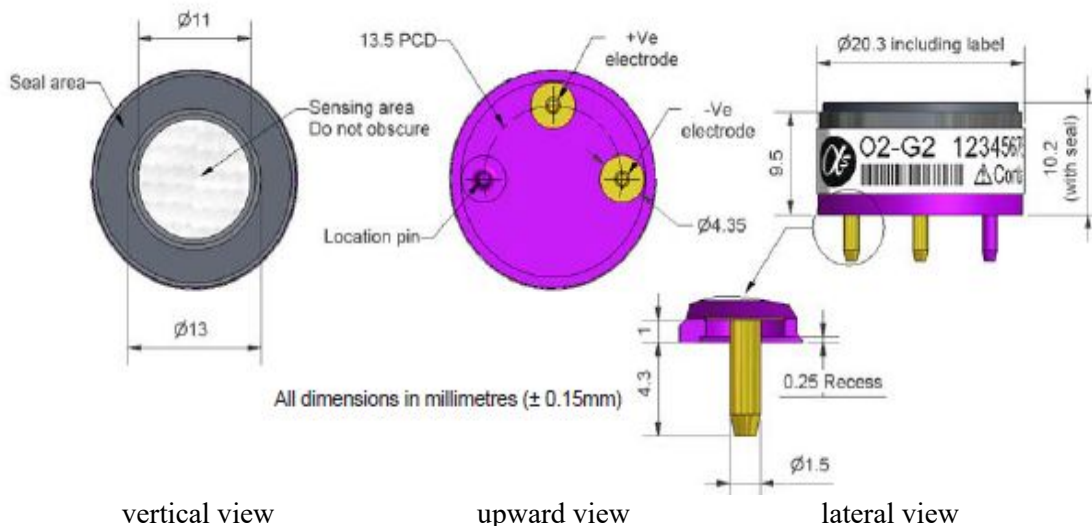


O2-G2 Ultra-Thin Oxygen Sensor



Figure 1 Schematic Diagram of O2-G2



function

output	(μ A) Time (s) from 20.9%O ₂ to 2 0%O ₂	30~42
Reaction time	at 22°C(47 Ω) (μ A) Output at 99.99%N ₂	< 20
zero point current	at 22°C	< 2.5

life span

Output drift	Change percentage over 3 months	< 2
working life	Output down to 20.9% Number of months _o original output 85%	> 24

envir- onment

Humidity sensitivity	Oxygen change percentage: 0~95%RH,40°C	< 0.7
pressure-sensitivity	20kPa, output change percentage/pressure change percentage	< 0.1
CO ₂ sensitivity	Output variation percentage per CO ₂ concentration ₂ at 5% CO	< 0.1
-20°C output	20.9% O ₂ , Output/20°C Percentage of outputs	87~93
50°C output	20.9% O ₂ , percentage of outputs/20°C outputs	103~107

key parameter

temperature range	°C	-30~55
pressure limit	kPa	80~120
Humidity range	Continuous relative humidity percentage (0-99% RH in the short term)	5~95
Storage period	Number of months for preservation from 3 to 20°C (to be kept in a sealed tank)	6
load resistance	Ω (recommend)	47~100
weight	g	<7

Figure 2. Temperature Characteristics of the Sensor in Air

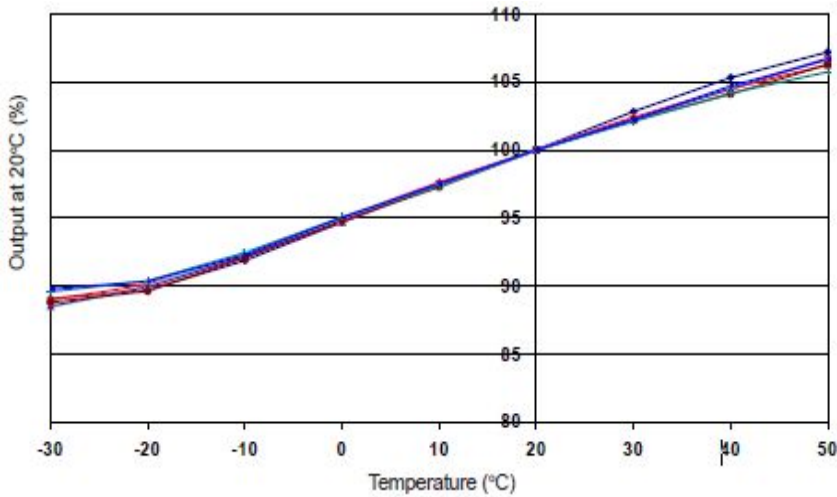
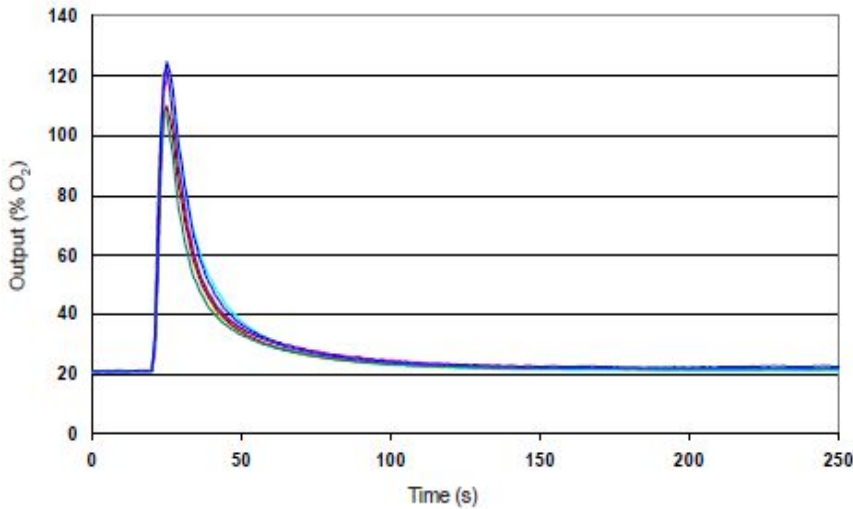


Figure 2 shows the sensitivity change caused by temperature change.

All capillary oxygen sensors show the characteristic of signal output with temperature change. Figure 2 shows the typical reaction of O2-G2.

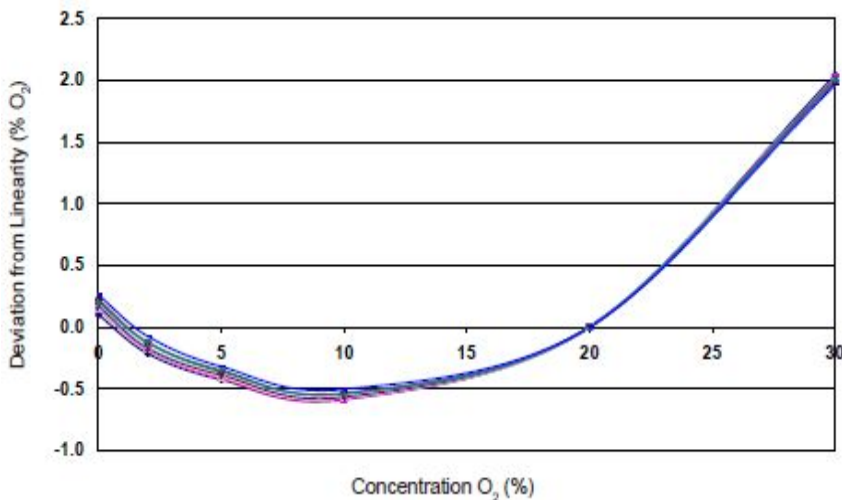
Figure 3 Pressure Transient Performance



A sudden pressure change causes a transient signal spike. Positive pressure increases the output signal, while negative pressure decreases it.

Figure 3 shows the typical transient response of the O2-G2 sensor under a pressure pulse of 10kPa.

Figure 4 Linearity



The mass flow oxygen sensor produces a nonlinear current as the oxygen concentration increases: $i = k \cdot \log(1/(1-C))$.

When drawing a linear graph, we find that the non-linearity is very consistent, as shown in Figure 4, so it can be corrected to the required precision in the software.

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