

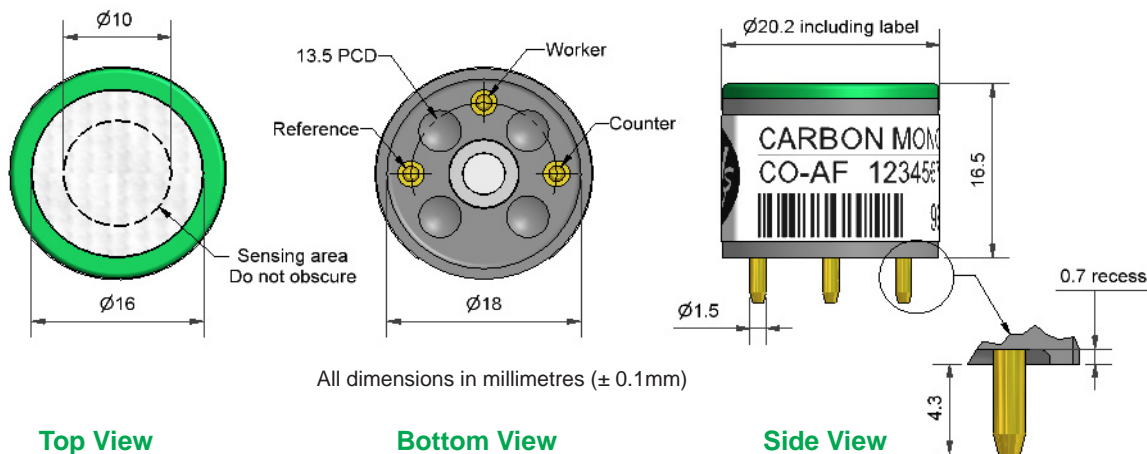


CO-AF Carbon Monoxide Sensor



PATENTED

Figure 1 CO-AF Schematic Diagram



All dimensions in millimetres (± 0.1 mm)

Top View

Bottom View

Side View

PERFORMANCE	Sensitivity		
	Sensitivity	nA/ppm in 400ppm CO	
Response time	t_{90} (s) from zero to 400ppm CO		< 25
Zero current	ppm equivalent in zero air		-4 to +2
Resolution	RMS noise (ppm equivalent)		< 0.5
Range	ppm CO limit of performance warranty		5,000
Linearity	ppm error at full scale, linear at zero, 1000ppm CO		+15 to +25
Overgas limit	maximum ppm for stable response to gas pulse		10,000

LIFETIME	Zero drift			
	Zero drift	ppm equivalent change/year in lab air		< 0.2
	Sensitivity drift	% change/year in lab air, monthly test		< 8
Operating life	months until 80% original signal (24 month warranted)		> 24	

ENVIRONMENTAL	Sensitivity @ -20°C			
	Sensitivity @ -20°C	% (output @ -20°C/output @ 20°C) @ 400ppm CO		63 to 88
	Sensitivity @ 50°C	% (output @ 50°C/output @ 20°C) @ 400ppm CO		102 to 115
	Zero @ -20°C	ppm equivalent change from 20°C		< ± 3
Zero @ 50°C	ppm equivalent change from 20°C		< ± 8	

CROSS SENSITIVITY	Filter capacity		ppm-hours		H ₂ S		250,000	
	Filter capacity	ppm-hours						600,000
	Filter capacity	ppm-hours						20,000
	Filter capacity	ppm-hours						300,000
	H ₂ S sensitivity	% measured gas @ 20ppm			H ₂ S			< 0.1
	NO ₂ sensitivity	% measured gas @ 10ppm			NO ₂			< 0.1
	Cl ₂ sensitivity	% measured gas @ 10ppm			Cl ₂			< 0.1
	NO sensitivity	% measured gas @ 50ppm			NO			< 5
	SO ₂ sensitivity	% measured gas @ 20ppm			SO ₂			< 0.1
	H ₂ sensitivity	% measured gas @ 400ppm			H ₂ at 20°C			< 60
	C ₂ H ₄ sensitivity	% measured gas @ 400ppm			C ₂ H ₄			< 25
	NH ₃ sensitivity	% measured gas @ 20ppm			NH ₃			< 0.1

KEY SPECIFICATIONS	Temperature range		°C		-30 to 50	
	Pressure range	kPa				80 to 120
	Humidity range	% rh continuous				15 to 90
	Storage period	months @ 3 to 20°C (stored in sealed pot)				6
	Load resistor	Ω (recommended)				10 to 47
	Weight	g				< 6



At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste, but contact the instrument manufacturer, Alphasense or its distributor for disposal instructions.

Technical Specification

Apollosense Ltd



CO-AF Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

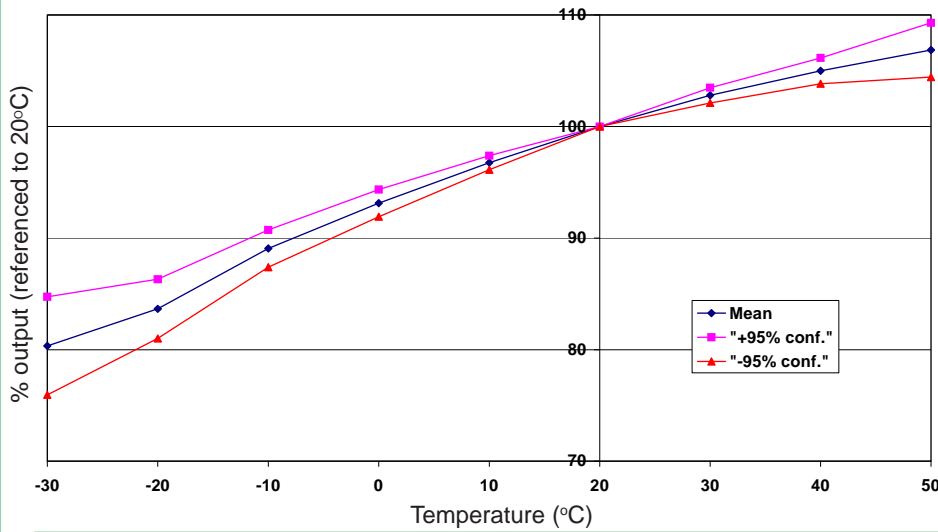


Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors. The mean and $\pm 95\%$ confidence intervals are shown.

Figure 3 Zero Temperature Dependence

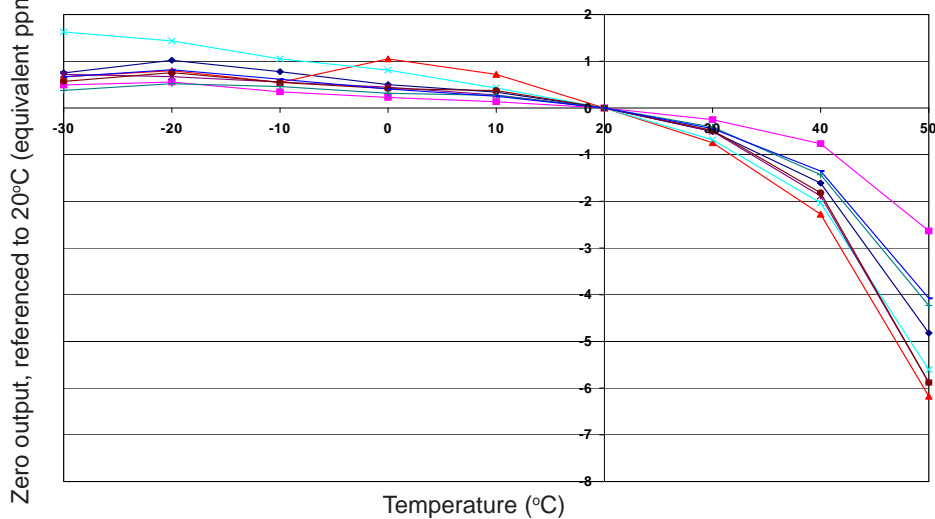


Figure 3 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 4 Response to Exposure to 2% CO

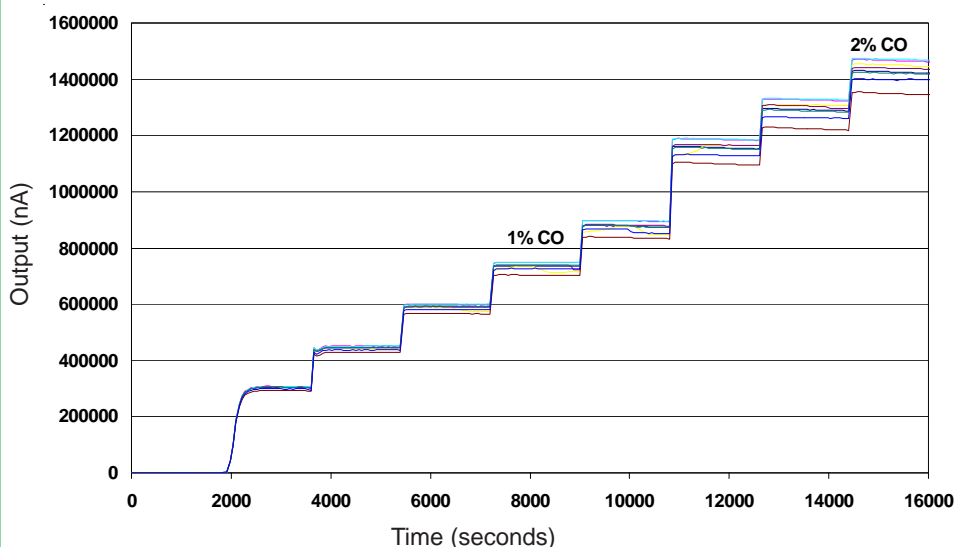


Figure 4 shows the excellent response to step changes in CO concentrations from zero to 2% CO by volume.

This data is taken from a typical batch of sensors.

ApolloSense Ltd