AlphaSense CO-AF Carbon Monoxide Sensor & Devkit

This carbon monoxide sensor is designed to provide students or scientists with proven electrochemical technology. OEMs will appreciate the low power, dependable technology for use in high volume applications.

CM-31910   AP-0005

FEATURES

- Low power
- Low cost
- Serial interface
- Replaceable electrochemical cell

CM-31911

MODELS

CM-31911 Development Kit – Our easiest to use version, it is ready to plug into your PC via USB. Use our free GasLab® software to read and data log carbon monoxide, temperature and % relative humidity. Includes on-board memory for data logging and RS485 communications.

CM-31910 – MX Board offers the same functionality as the development kit, but is designed to be integrated into your product.

AP-0005 – Sensor only

GASLAB.COM
SENSOR SPECIALISTS

131 BUSINESS CENTER DR. STE. A3
ORMOND BEACH, FL 32174
(386) 872-7668
WWW.GASLAB.COM | SALES@GASLAB.COM

MX Board & Devkit Specifications

ELECTRICAL SPECIFICATIONS	
Supply Voltage	3.3 to 5.5 VDC
Peak Supply Current	10ma
Average Power	< 3mW (1 second streaming 1 min logging)
UART Tx	3V 9600 Baud N 8 1
UART Rx Voltage	3V – 5V
Operating Temp	-30°C – 60°C
Humidity	0 – 99% RH (non-condensing)
Barometric Pressure	50 – 115 kpa

MECHANICAL SPECIFICATIONS	
Dimensions	25mm x 40mm x 29mm
Dimensions (w/sensor)	25mm x 40mm x 13mm
Weight	6g sensor, 5.8g board
Connector	10 pin Header

| ABSOLUTE MAXIMUM RATINGS	
Supply Voltage	6 Volts DC
Rx Input	5.5 V
Operating Temp	-30°C – 60°C
Humidity	0 – 99% RH (non-condensing)
Pressure	500 kpa

SIGNAL DEFNITIONS	
GND	Power Supply and RS485 return.
+SUPPLY	+3.2 – 5.5 Volts DC
Rx	CMOS Level Input to Controller
Tx	CMOS Level (0-3V) Output from controller.
AOUT	Analog Output from controller (when enabled). Voltage is proportional to gas concentration.
SELECT	Open selects the CMOS Tx/Rx Interface. Connect to GND to select the RS485 Interface.
RS485 B	RS485 B Signal. High in Marking State
RS485 A	RS485 A Signal. Low in Marking State.

Sensor Specifications

COMMON PERFORMANCE SPECIFICATIONS	
Temperature Accuracy at 20-40°C	±0.3°C
Temperature Accuracy 0 – 50°C	±2% C
Relative Humidity Accuracy 20% – 80%	±2% RH
Sensor Voltage Resolution	16 bits

CONNECTOR PINOUT*	
GND	SELECT
3.3 – 5.5 Volt DC	GND
Rx	GND
Tx	RS485 B
Analog Out	RS485 A

Figure 1 Dimensions

All dimensions in millimetres (± 0.1mm)

Top View   **Bottom View**   **Side View**
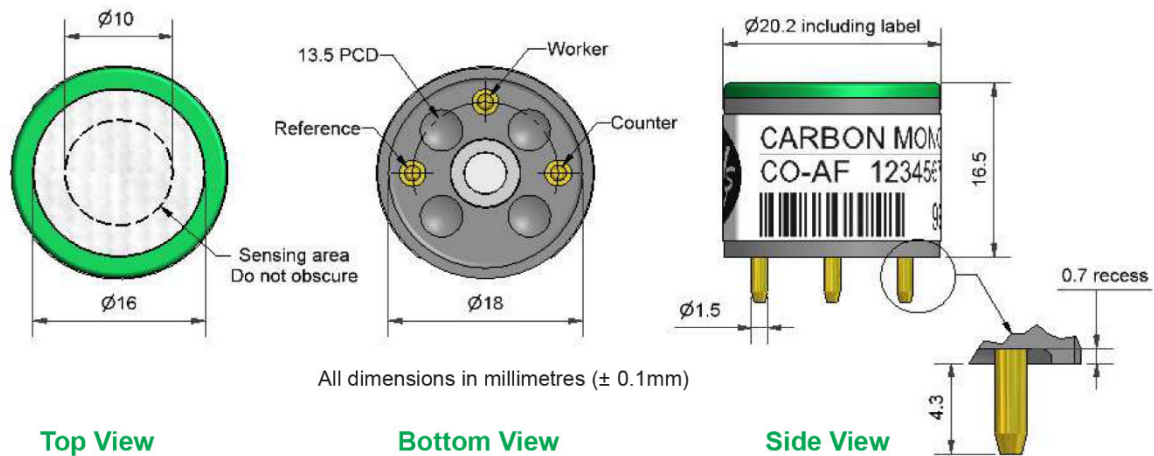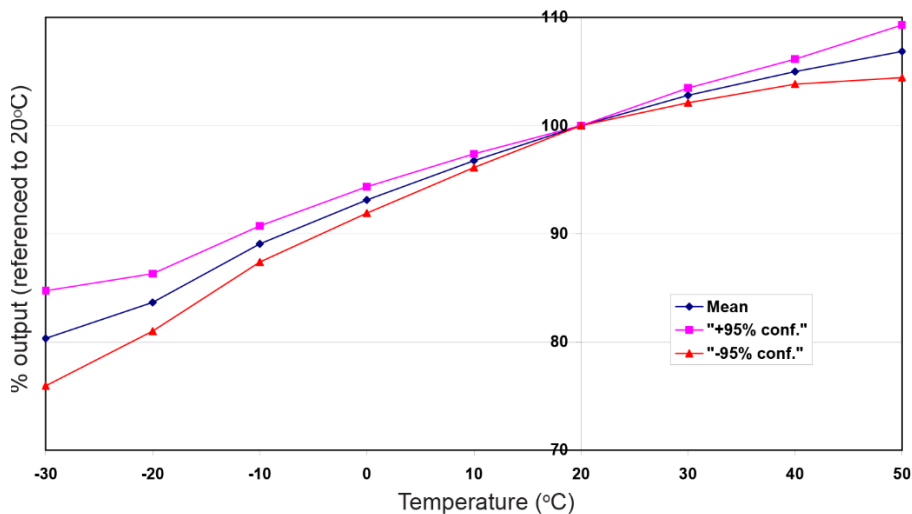
Figure 2 Sensitivity Temperature Dependence

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 ±95% confidence intervals are shown.
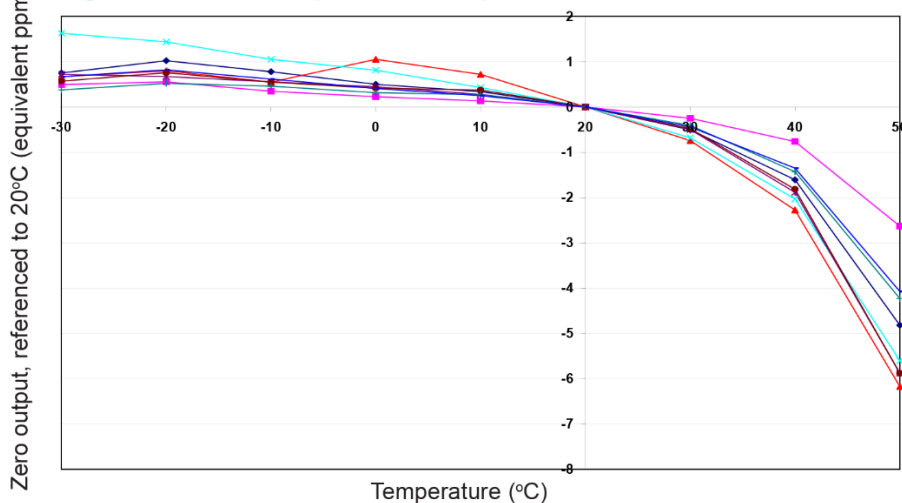
Figure 3 Zero Temperature Dependence

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.

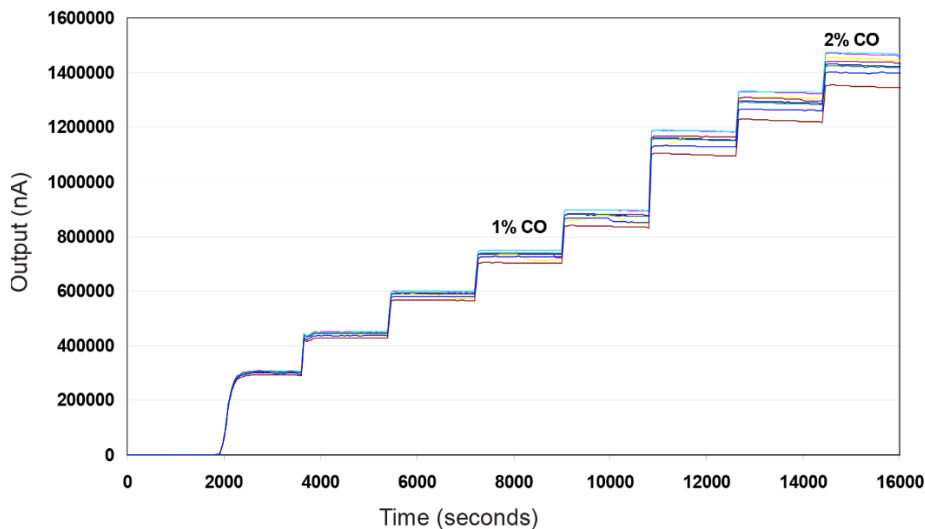## Figure 4 Response to Exposure to 2% CO

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.