

# SV-Multigas-2

## CO<sub>2</sub> and O<sub>2</sub> Sensor



The SV-Multigas-2 is a dual oxygen and carbon dioxide monitor designed for vehicles operating in the upper atmosphere. Housed in a robust, compact enclosure, the unit is ideal for use in airborne delivery systems, satellites and aircraft cabins. Since 2014 the SV-Multigas-2 has been successfully used in rockets traveling to outer space.

The SV-Multigas-2 incorporates user-maintainable analogue sensors that provide a 1 to 5 V output. This modular approach to gas monitoring ensures that our customers have the flexibility to integrate the unit into their own system. It can be either installed directly in the gas path or used for general air monitoring.

### KEY FEATURES

**Operating temperature 0 °C to 40 °C (32 °F to 104 °F)**

**Dual state-of-the-art oxygen and carbon dioxide sensors**

**Two analogue outputs, one for each gas detected**

**Maximum power consumption less than 5 watts**

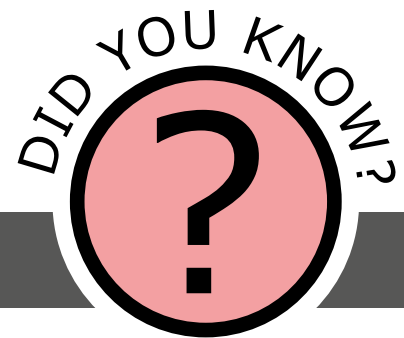
**Designed to operate safely in a vacuum for four hours**



### INDUSTRIES



Dozens of SV-Multigas-2 units are currently orbiting the earth.



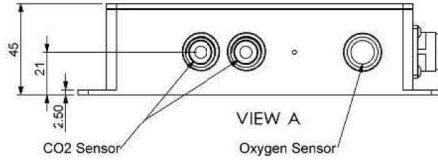
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# SV-Multigas-2

## CO2 and O2 Sensor

Overview detail:



Electrical connection via D38999/26FB35PC MIL-DTL-38999 Series III Flange Mount Male Connector

Mating Cable Mount Connector Details:

D38999/26FB35SC MIL-DTL-38999 Series III

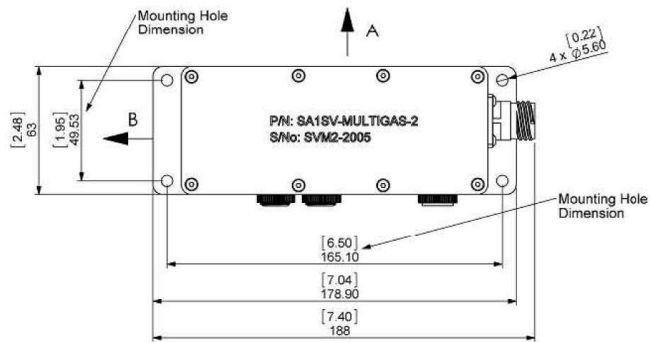
Backshell to be decided by customer

External shield to be connected via backshell to sensor body once mated.

RFI Gasket (Conductive filled silicone-Silver Plated Aluminium)

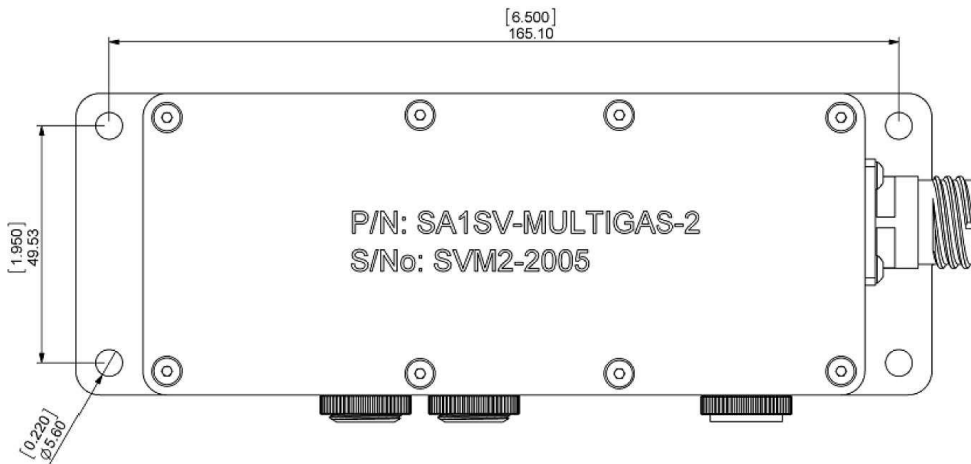


VIEW B

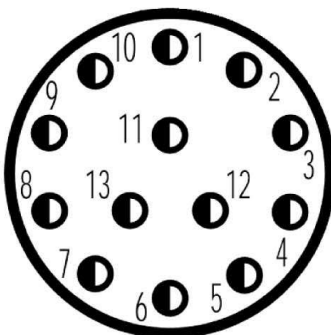


Mounting detail:

Mount using 4 x #10-32 cap screws.



Electrical connections:



Rear Face of D38999/26FB35SC Cable Connector

Pin Number	Function
1	EARTH
2	18 to 36VDC
3	OV
4	N/A
5	CO2 Analogue Output +
6	CO2 Analogue Output -
7	N/A
8	O2 Analogue Output +
9	O2 Analogue Output -
10	CO2 RS485A
11	CO2 RS485B
12	O2 RS485A
13	O2 RS485B

## SPECIFICATIONS

### Oxygen Sensor

**Range:** 0 to 5.80 psi pO<sub>2</sub> / 0 to 400 mbar  
**Repeatability @ 14.5 psia, 70 °F / 1000 mbara, 21 °C:** ± 0.116 psi pO<sub>2</sub> / ± 8 mbar

### Carbon Dioxide Sensor

**Range:** 0 to 0.14 psi pCO<sub>2</sub> / 0 to 10 mbar  
**Repeatability @ 14.5 psia, 70 °F / 1000 mbara, 21 °C:** ±(0.0014 psi pCO<sub>2</sub> + 1.1% of reading) / ±(0.1 mbar + 1.1% of reading)

## System

**Operating temperature range:** 32 to 104 °F / 0 to 40 °C

**Storage temperature range:** -4 to 140 °F / -20 to 60 °C

**Operating pressure range:** 8.7 to 17.4 psia / 600 mbar to 1200 mbara

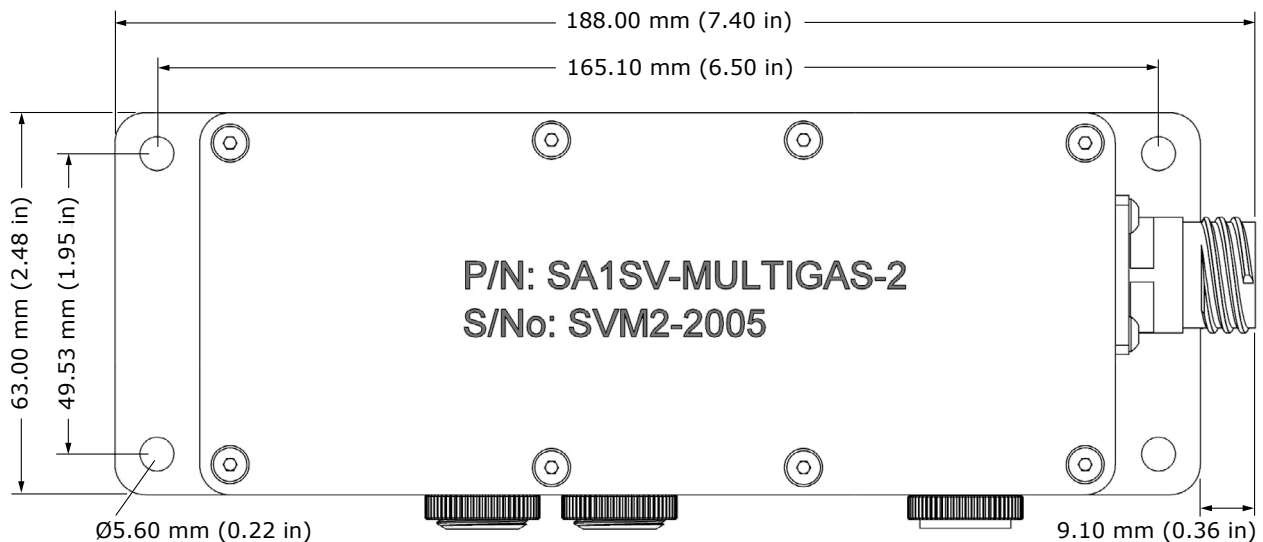
**Vacuum tolerance:** normal operation of the SV-Multigas-2 will not be affected by 4 hour exposure to vacuum

**Electrical supply:** 18 to 36 V DC, 100 mV ripple maximum

**Power consumption:** 5 W maximum

**2 analogue outputs are provided, one for each gas:** Zero output: 1.0 V, full-scale output: 5.0 V, warm-up/fault output: 0.25 V  
*Outputs are isolated from the incoming power supply and from each other*

*All wiring is to MIL-DTL-22759 (SAE-AS-22759/33)*



NOTE: The SV-Multigas2 should be mounted using four x 10-32 hex socket cap screws (not supplied)

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