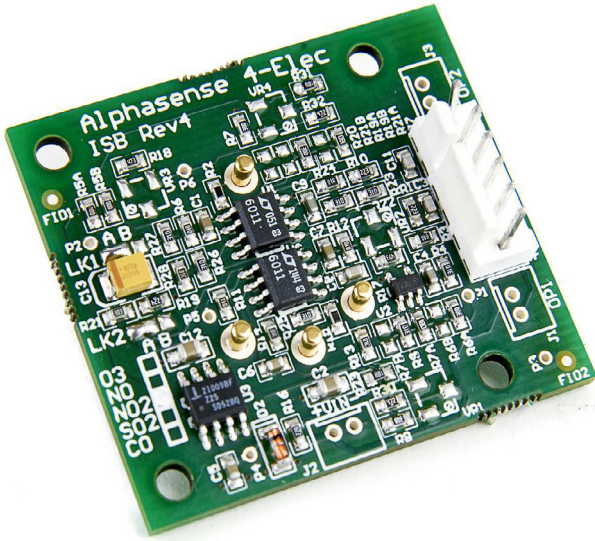


# Individual Sensor Board (ISB)

## Alphasense B4 4-Electrode Gas Sensors



The Individual Sensor Board (ISB) is designed for use with the Alphasense B4 family of four-electrode gas sensors. This potentiostat provides a dual channel voltage output.

A low noise bandgap provides the bias voltage for NO sensors and the ISB can measure both oxidising (CO, H<sub>2</sub>S, SO<sub>2</sub> and NO) and reducing (O<sub>3</sub> and NO<sub>2</sub>) gases. The ISB is configured for specific sensors: NO, NO<sub>2</sub>, O<sub>3</sub> and CO/ H<sub>2</sub>S/ SO<sub>2</sub>.

Designed for low power applications, the ISB requires 3.5 to 6.4 stable DC supply at only 1mA.

If the ISB is supplied separate from the B4 sensor, ensure it is matched to the sensor type according to Table 1:

**Table 1 ISB Part numbers**

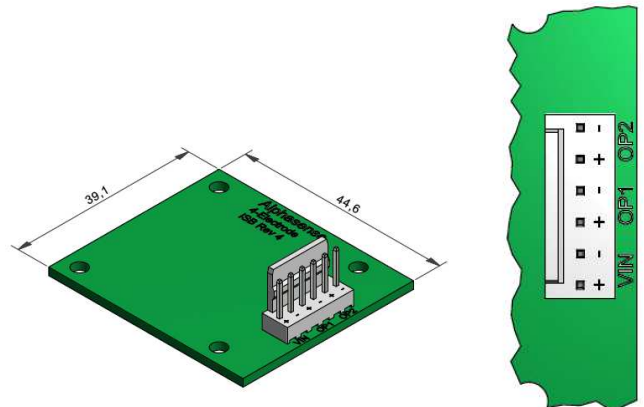
Part number	Sensor
000-0ISB-00	CO-B4, SO <sub>2</sub> -B4, H <sub>2</sub> S-B4
000-0ISB-01	NO-B4
000-0ISB-02	NO <sub>2</sub> -B43F, OX-B431

**Figure 2 ISB dimensions and socket for power and signals**

Both the working electrode and auxiliary electrode (used to compensate for zero current) have equivalent two stage amplifiers and the buffered signals are available on the 6-way Molex socket along with the power IN pins. There are no adjustments on the ISB: zero offset and gain are fixed.

The ISB is a very low noise design and care must be taken with grounding and screening to achieve good ppb resolution. The power supply must be filtered to avoid noise on the output.

Accessories include gassing hoods for calibration checks and mounting pillars, sealing gaskets and hardware for easy fitting to your housing.



**Table 2 General Electrical Specifications (ISB Iss. 4)**

V <sub>in</sub>	3.5–6.5 V
I <sub>in</sub>	<1.5 mA
V <sub>out</sub> (max)*	V <sub>in</sub> –0.5 V

\* V<sub>out</sub> is electronically offset to allow for sensor current changes less than the sensor zero current due to temperature and humidity effects.

Figure 3 ISB dimensions and mounting hole locations

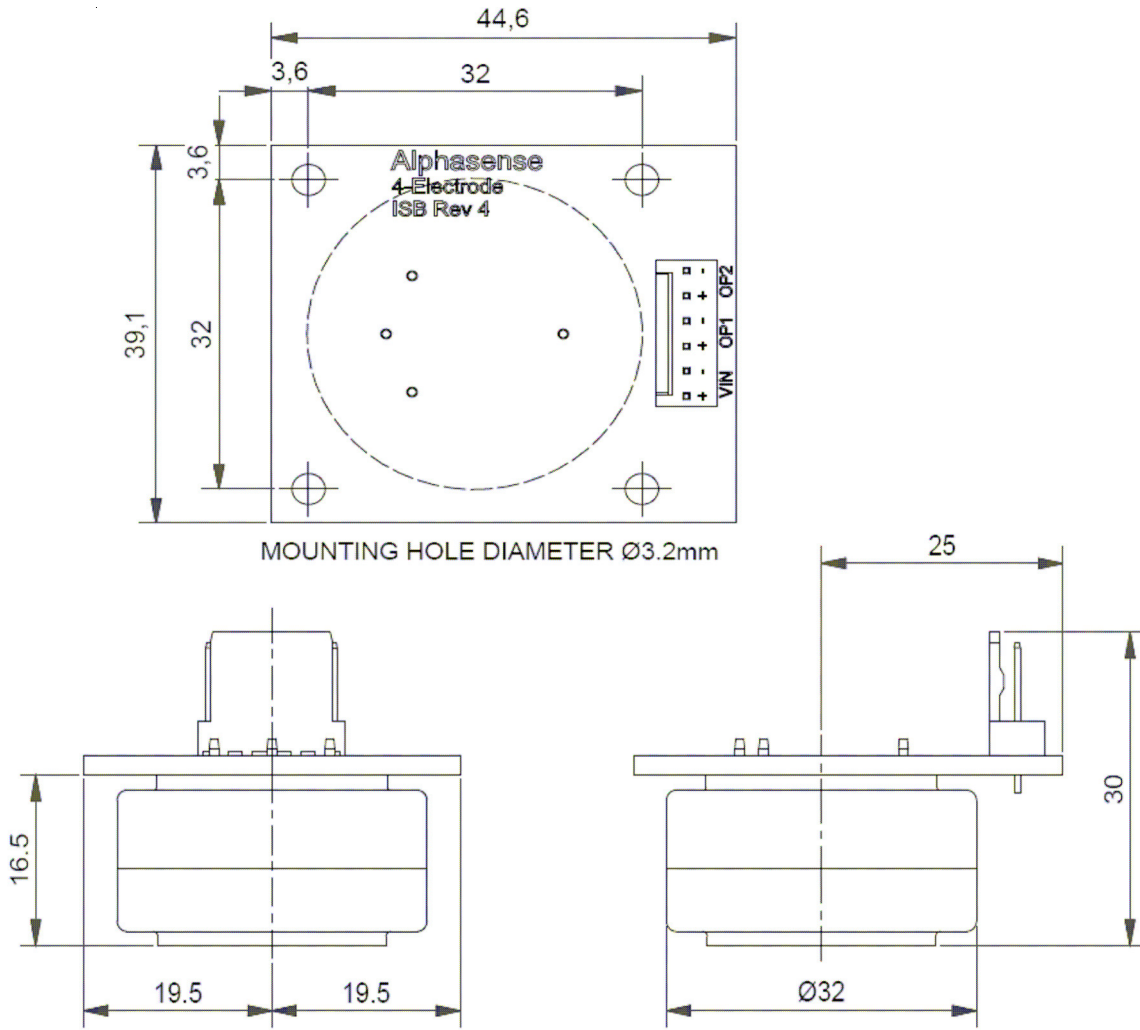


Table 3 Optional ISB Accessories

Optional fitting kit # 000-0ISB-KIT	
4 x pillars	16.0 mm length, M3 tapped
8 x washers	M3 flat washers
4 x screws	M3 x 8 button head screws
1 x transmitter lead	Molex socket housing with 150 mm leads

**NB:** 000-0ISB-KIT is required with any gas hood

Part Number	Gas Hood*
000-GSHD-00	SS Swagelok 1/4" connector
000-GSHD-01	PFA Swagelok 1/4" tube connector
000-GSHD-02	Nickel plated brass 1/4" BSP barb (standard fitting)
000-TUBE-FEP	1/4" OD FEP tubing 1.5mtr

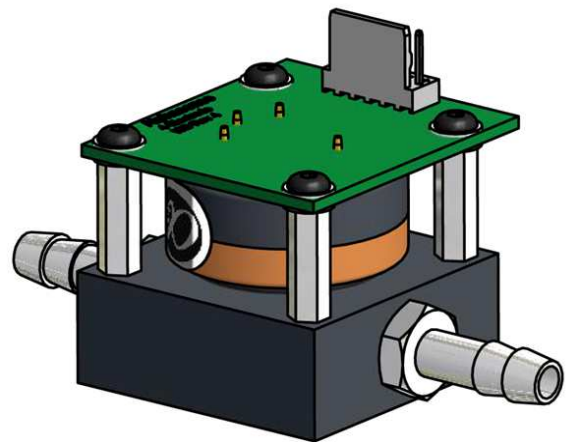


Figure 4 Gas Hood with sensor and ISB