



# Individual Sensor Board (ISB) Alphasense B4 4-Electrode Gas Sensors

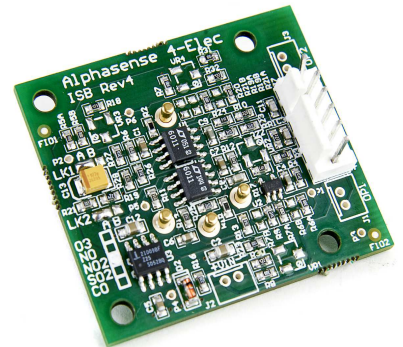
# Technical Specification

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.

Figure 1 ISB

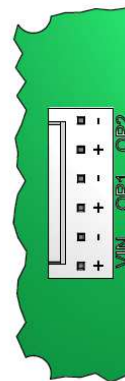
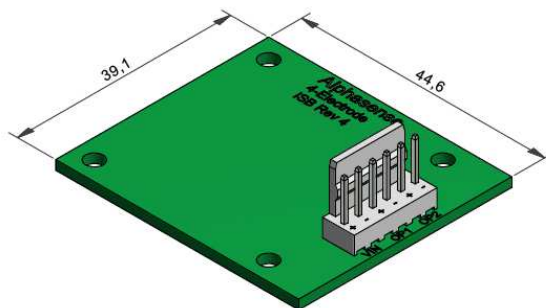


If the ISB is supplied separate from the B4 sensor, ensure it is matched to the sensor type according to Table 1:

Table 1 ISB Part numbers

Part number	Sensor
000-0ISB-00	CO-B4, SO2-B4, H2S-B4
000-0ISB-01	NO-B4
000-0ISB-02	NO2-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.



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Figure 3 ISB dimensions and mounting hole locations

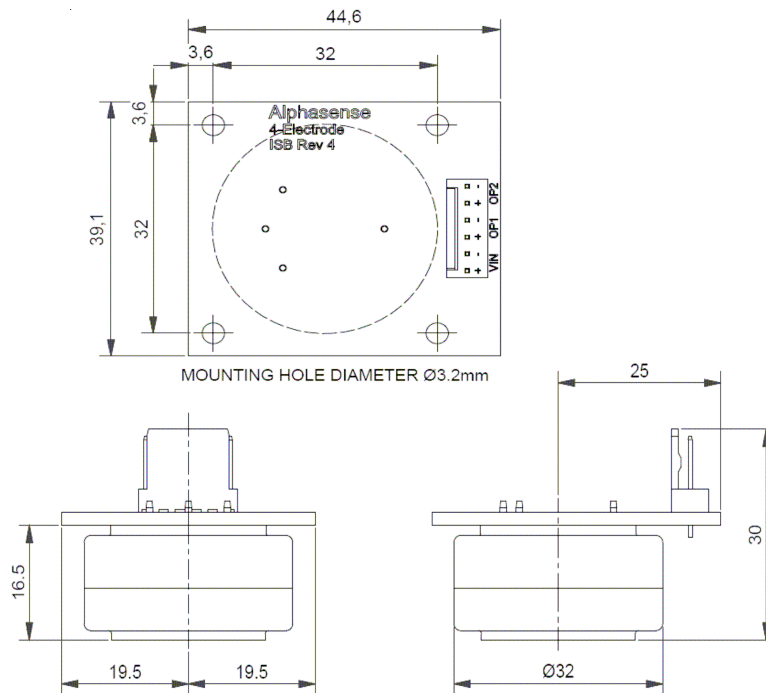


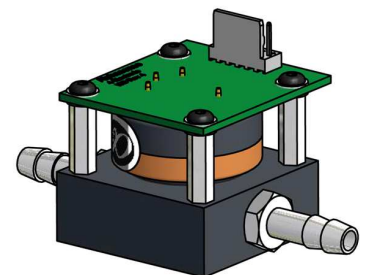
Table 2 Optional ISB Accessories

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**

Figure 4 Gas Hood with sensor and ISB

Part Number	Gas Hood*
000-GSHD-00	SS Swagelok ¼" connector
000-GSHD-01	PFA Swagelok ¼" tube connector
000-GSHD-02	Nickel plated brass ¼" BSP barb (standard fitting)
000-TUBE-FEP	¼" OD FEP tubing 1.5mtr



For further information on the performance of sensors in the Alphasense range or any other subject, please contact Alphasense Ltd. For Application Notes visit "[www.alphasense.com](http://www.alphasense.com)"

**NOTE:** as applications of use are beyond our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors and transmitters are suitable for their own requirements.

*In the interest of continued product improvement, we reserve the right to change design features and specifications without prior notification. The data contained in this document is for guidance only. Alphasense Ltd accepts no liability for any consequential losses, injury or damage resulting from the use of this document or the information contained in it (©ALPHASENSE LTD) Doc. Ref. ISB/OCT16*