

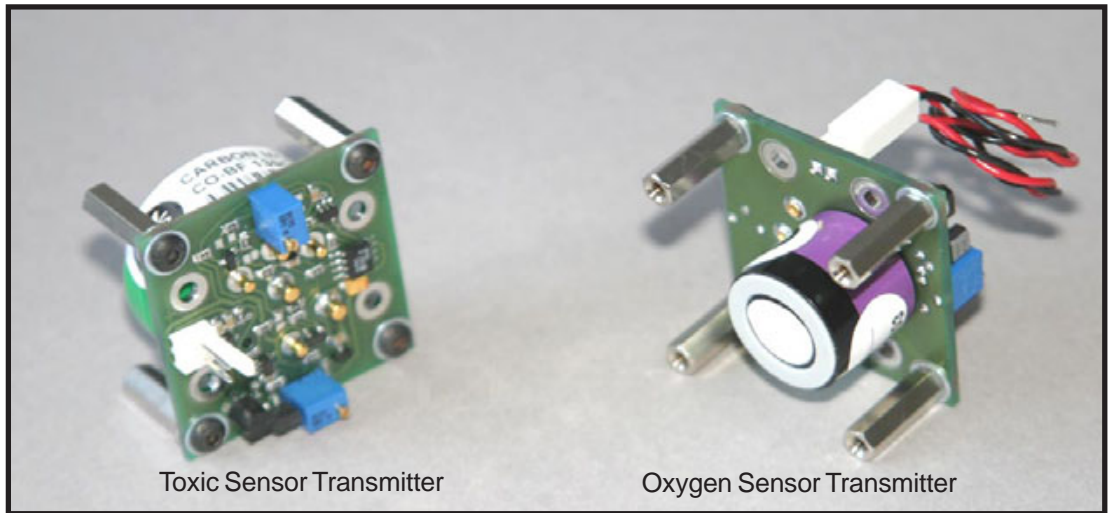


4 to 20 mA Transmitter Boards for Alphasense "B" Type Toxic & O2-A2 Oxygen Sensors



Figure 1 Toxic and Oxygen Sensor Transmitter Boards

PATENTED



Technical Specification

Alphasense 4-20 mA transmitter boards provide a cost effective way for Original Equipment Manufacturers to engineer transmitter heads for fixed installation systems. The range of sensors are shown in Table 1. The boards supplied with sensors are pre-calibrated.

The 4-20 mA output signal provides an equivalent performance to that shown in individual sensor data sheets provided for each of the Alphasense "B" Series Toxic and "A" series two year oxygen sensors.

Each board is provided with set of mounting pillars for location of the board onto an enclosure. To allow OEM's to distinguish their product from other offerings, the sensor to gas aperture design is left to the OEM to execute.

Alphasense transmitter boards offer exceptional **stability**, minimal **settling time** when put on load, wide **operating voltage range** and **low RFI susceptibility** through the use of an unbroken ground plane.

Gas	Sensor Type	Full-Scale Gas Concentration (ppm)	Ordering Code
Carbon Monoxide	CO-BF	1,000	000-00CO-BF
Carbon Monoxide	CO-BF	100	000-00CO-BF
Hydrogen Sulfide	H2S-BE	1,000	000-0H2S-BE
Hydrogen Sulfide	H2S-B1	200	000-0H2S-B1
Hydrogen Sulfide	H2S-B1	25	000-0H2S-B1
Sulfur Dioxide	SO2-BF	100	000-0SO2-BF
Sulfur Dioxide	SO2-BF	20	000-0SO2-BF
Nitrogen Dioxide	NO2-B1	50	000-0NO2-B1
Nitrogen Dioxide	NO2-B1	10	000-0NO2-B1
Chlorine	CL2-B1	10	000-0CL2-B1
Oxygen	O2-A2	15% - 25% (Vol.)	000-0O2-A2

Table 1. Transmitter Board and Sensor Product Codes

If a particular Full-Scale output is not available then contact Alphasense for availability. Transmitters for other gases may be available, contact Alphasense for current list.

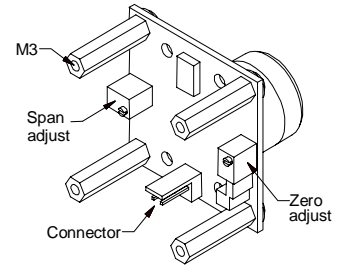
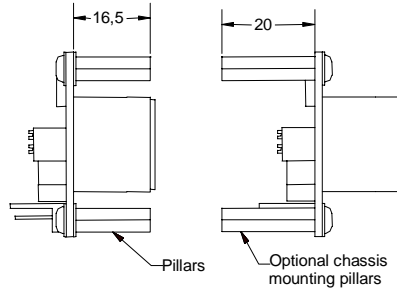
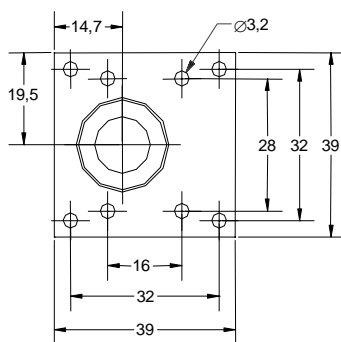


4 to 20 mA Transmitter Boards

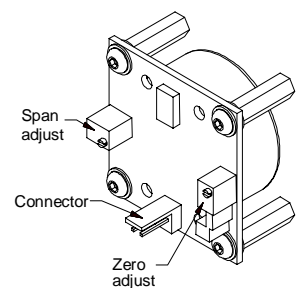
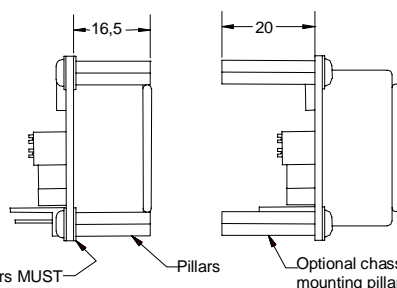
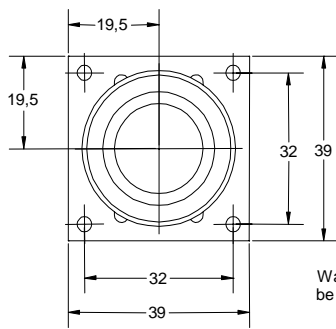
Technical Specification

Figure 2 Transmitter Board Dimension Details

Oxygen Transmitter



Toxic Gas Transmitter



All dimensions in mm ± 0.15

Transmitter Specifications

Input voltage required	+7.5 to +35.0 Volts DC
Output at zero gas concentration (or 15% Oxygen)	4 mA (user adjustable)
Output at full-scale (or 25% Oxygen)	20 mA (user adjustable)
Setability/stability	<0.05mA (<0.25% Full Scale)
Maximum load @ 20 mA, 24 VDC	825 ohms
Supply voltage dependence	< $\pm 0.2\%$ output from +7.5 to +35 Volts DC
Connector	2 pin Molex plug (ref. 22-27-2021) supplied with leads
Transmitter current requirement	<100 μ A
Operating conditions	See sensor data sheet specifications
Calibration	Multiturn zero and span potentiometers
Power supply protection	Diode protection to voltage regulator
No-power equivalent circuit (for Toxic gas versions)	Sensor short-circuited during power-down
Full-scale gas concentration	Precalibrated (See Table 1)

Conformal Coating

The circuit board is conformally coated with an acrylic sealant to ensure reliable operation in extreme conditions.

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.

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"