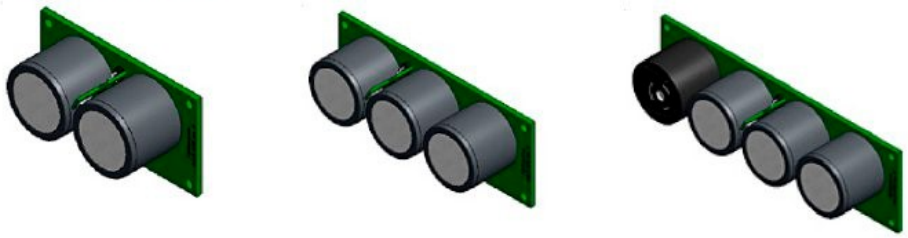
Technical Specification

3-Way AFE
Alphasense A4 4-Electrode Gas Sensors

Fig 1 2, 3 and 3+PID AFE



Alphasense air quality sensors require low noise electronics to optimise their performance. We have worked for many years perfecting our circuits, so you can now take advantage of our low noise circuits for easiest use.

The family of Analogue Front End (AFE) circuits are designed for use with the A4 air quality sensors: these high density circuits save space because mobile air quality monitors need to be compact. Connect the AFE with A4 sensors to your multtiplexed ADC and you are recording air quality data immediately.

Features of the AFEs include:

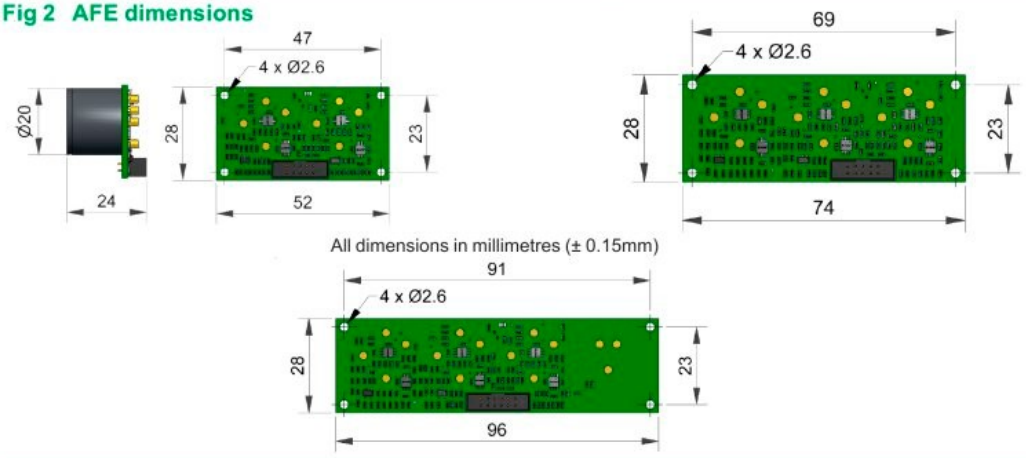
- 2 sensor, 3 sensor or 3 sensor plus PID versions are available. The AFEs are analogue potentiostat circuits with on-board power regulation and reference voltages: there is no digital circuitry on the AFEs.
- Power requirement: 650uA per channel; for example, 3 sensor AFE with sensors requires only 2 mA.
- Although electrochemical sensors require + and – power supplies, the negative supply is generated on the AFE so you need only supply 3.4 to 6.4 V and analogue ground.
- Each AFE includes a Pt1000 with separate circuit board, located next to the centre sensor for correct temperature compensation. Pt1000 output is 1mV/ºC. Offset needs room temperature software calibration.

AFEs are not user adjustable:

- you are supplied with offset voltages for each specific sensor (two offsets for each sensor: working electrode offset and auxiliary electrode offset) which you program into your software.
- AFE gain is preset. You are supplied with the mV/ppb calibration for each working electrode which you then program into your software.

Accessories include cables (specify 50 mm or 200 mm length), gassing hoods for calibration checks and mounting pillars, sealing gaskets and hardware for easy fitting to your case.

Fig 2 AFE dimensions



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