Capture’s ‘AA’ series Ethanol sensors are designed for a diverse range of applications.

The sensor stabilises in less than 1 minute and thereafter zero drift is less than 1%/year. The humidity response is small and the sensor can operate in a range of ambient temperatures. The sensor can operate in both low and moderate gas concentrations.

Power consumption is typically about 600mW. The sensor has some cross sensitivities to some other oxidisable molecules such as solvents and vapours.

Physically small, the sensors are constructed by depositing a thick film layer of gas sensitive material onto an alumina substrate, which incorporates a platinum heater.

Low cost alarms grade sensors for high volume applications and premium performance continuous monitor grades are offered.

The sensors are supplied pre-characterised at a standard range of 0-1000 ppm Ethanol. Other ranges are available.

Baseline Sensor Resistance in clean air1 at 21°C 50%RH
Typical Value 85kΩ

Sensor Resistance in 250ppm Ethanol
Typical Value 890KΩ

Sensor Resistance in 1000ppm Ethanol
Typical Value 1300KΩ

Typical sensor measurement voltage
Typical Value 0.1V continuous

Ambient Operating temperature range
Typical Value -20°C to +60°C

Lifetime
Long lifetime - based on 30,000 thermal cycles: 23°C - 400°C and accelerated thermal ageing at 480°C for 1 year. See MIL-STD-883D
Typical Value > 8.4 Years.

Key Features

Fast response •
Improved Range & Repeatability •
(Low Cross Sensitivity) •
High resistance to poisoning •
Temperature stabilization inherent in design of heater driver •
Long lifetime - in excess of 10 years •

1Oil free compressed air supply with platinum catalyst and activated carbon filtration.
The baseline and gas response of the sensor are a function of the operating temperature of the device. To ensure stability of the device, it is essential to maintain the operating temperature of the sensor to within a fraction of a degree. This is achieved by use of the heater driver circuit shown opposite.

The sensor heater forms part of a Wheatstone bridge. The current through the heater is controlled so as to maintain the sensor heater at constant resistance. The supply voltage needs to be stable and about 1V (typically > 5V or 6V) above that required by the heater to achieve the correct sensor temperature.

This board can be purchased directly from Capteur, pre-matched with the appropriate settings for its associated sensor, for evaluation purposes.

The sensor operates as a gas sensitive resistor. Voltage applied to the sensor to measure its resistance should be such that the current through the sensor does not exceed 5µA.

Capteur can supply a general interface board which contains both the heater control circuit and provides an output voltage proportional to the sensor’s resistance change.

Capteur reserve the right to change the design features or any technical details without any prior notice.