A0720200

CO_2 MONITORING MODULES A0720200

Metal oxide semiconductor type CO_2 sensor: SB-AQ6A

For air quality control, ventilation system, and environmental monitoring

Features

- Most suitable for indoor air quality control and ventilation system monitoring CO_2 in the range between 400 ppm to 3000 ppm.
- Semiconductor type CO_2 sensor's cost is very low compared with an optical type.
- No maintenance and long life

Applications

- Indoor air quality controls
- Ventilation for home and industrial purposes
- CO_2 monitoring in living rooms

We are the first company in the world to have succeeded in commercializing CO_2 (Carbon dioxide) sensors using metal oxide semiconductors (Awarded for "Technical Achievements" by the Chemical Society of Japan). Doping Lanthanum into tin-dioxide has realized a large increase in CO_2 sensitivity. With this sensor, it is possible to monitor CO_2 concentration in the ambient atmosphere. Gas sensitive semiconductor material is a mini bead type, a heater coil and electrode wire are embedded in the element. This sensor can be operated with just 35mW power consumption (Fig. 1). The sensing element is installed in the metal housing with three pins. This sensor unit is placed in an external filter housing removing the effect of noise gases and wind (Fig. 2). Fig.3 shows the gas sensitivity of SB-AQ6A. Fig.4 shows the gas sensitivity of A0720200. "Automatic base level renewal method" is implemented in the software which changes from the sensor output signal to CO_2 concentration.

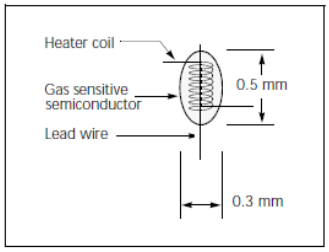


Fig 1. Sensing element

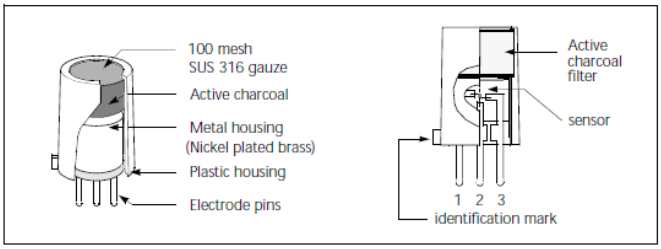


Fig 2. Configuration

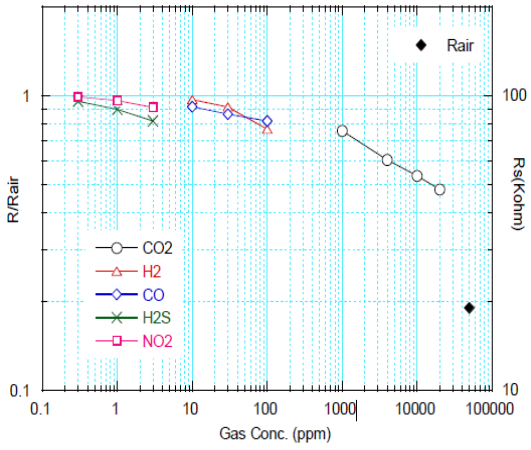


Fig 3. Cross sensitivity (SB-AQ6A)

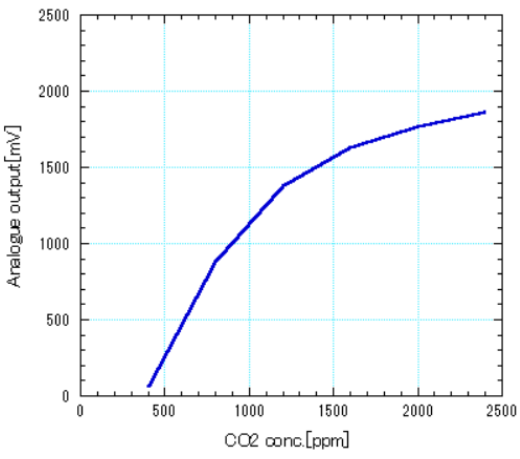


Fig 4. Converting analogue output to CO2 concentration

SPECIFICATIONS

Specifications: A0720200

specifications	
Power supply	DC5V±4%
Initial warm-up time	The module releases no output for 150 seconds after power-on to prevent initial malfunction during which no gas is detected.
Detection method	Semiconductor gas sensor (SB-AQ6A)
Analogue output function	Voltage output (0 to 4.5V). Output current is lower than 5mA. Zero volt corresponds to 400ppm.
Analogue output tolerance	±10% of full scale
Alarm function	not available
Guaranteed detection range	400 to 3000ppm (CO_2 contents in clean air should be 400ppm)
Module power consumption	Lower than 200mW
Operating temperature	0 to 40C (Absolute humidity should be more than 3g/m^3)
Storage temperature	-10 to 60C
External dimensions	30×40×20 (height) [mm]
Net weight	Approx. 10g

I/O connector specifications

No.	Function
1	GND for power supply
2	+5V DC for power supply
3	Analogue output 0-5V
4	GND for analogue output

- Analogue output corresponds to the concentration of CO_2 only.
- Attached connector: B4B-XH-A by JST.

How to use

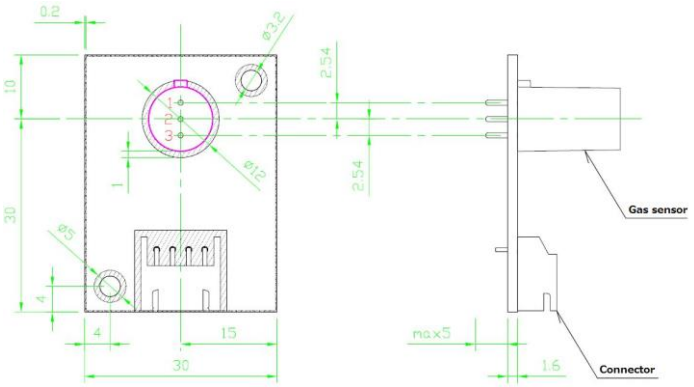
1. Supply 5Vdc±2% between connector pins of 1 (GND) and 2 (+5V).
2. Wait for about 2 min 30 seconds (150 seconds).
3. Measure the analogue output voltage between pins 3 and 4 and convert the voltage to CO2 ppm according to Fig.4.
4. Disconnect power when finishing the measurement.

Pin 4 →

Pin 1 →

← Gas sensor

Reference : External view



Please contact

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