COZIR

Ultra Low Power CO2 Sensor

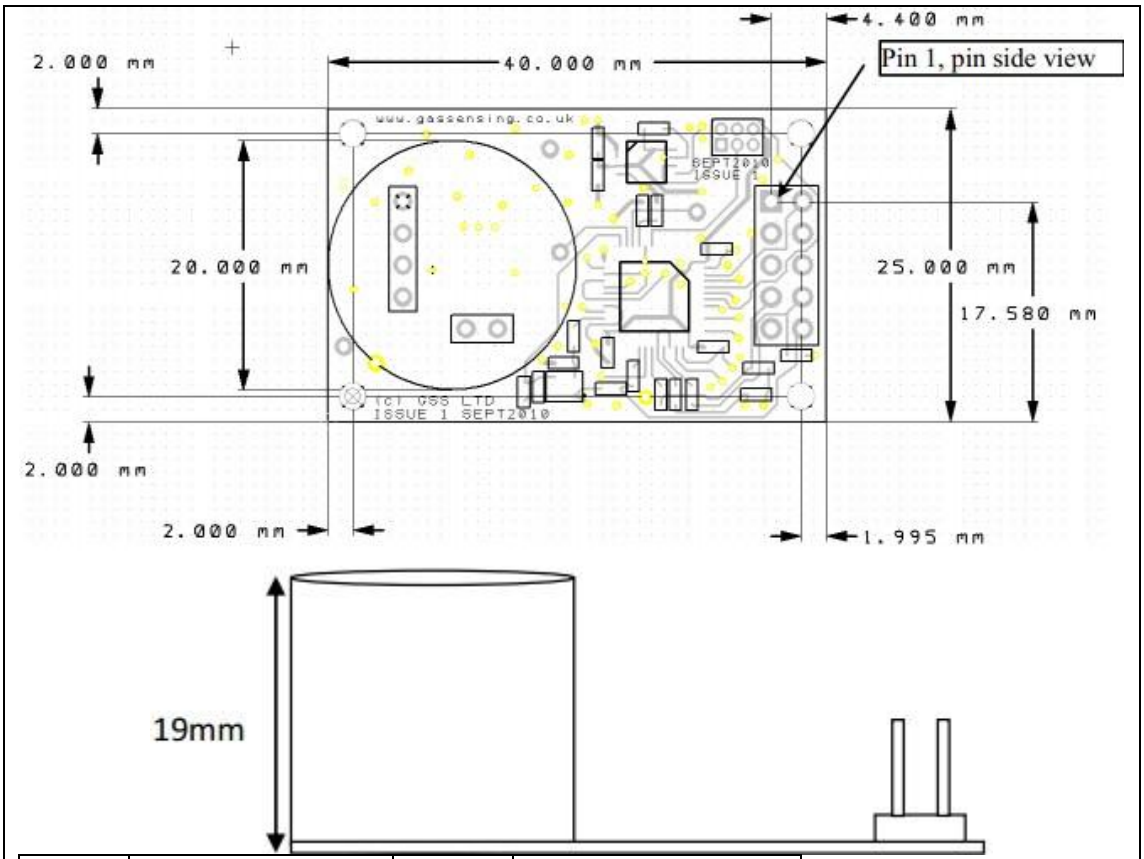
COZIR is a high-performance CO2 sensor with ultra-low power consumption (3.5mW), making it an ideal choice for battery-powered products and portable devices. Built on IR LED technology and innovative optical design, COZIR delivers the lowest power consumption among NDIR sensors, while offering optional temperature and humidity outputs. As GSS Corporation's third-generation product, COZIR stands as a leader in IR LEDCO2 sensing technology.

The range is 0-5%,0-10%,0-60% and 0-100%, which makes COZIR-W suitable for applications such as diving, industrial safety and automotive manufacturing.

- Ultra low power 3.5mW
- The measurement range is from 0 to 100%
- Power supply voltage 3.3v
- The peak current is only 33mA
- Optional temperature and humidity output

technical parameter

Overall performance	
preheating time	<10s
work environment	0℃ to 50℃ (standard) -25℃ to 55℃ (expandable range) 0 Up to 95% RH, non-condensing
storage temperature	-30℃ to +70℃
CO2 measurement	
Sensing methods	Non-diffuse infrared light absorption technology Gold coating optical path technology All solid state light source and detector technology
sample mode	gaseous diffusion
measuring range	0-5%，0-20%，0-60%，0-100%
definition	± 70ppm+/-5% reading
Nonlinearity	<1%FS
Pressure dependency	The 0.13% reading is per mmHg at atmospheric pressure
working pressure range	950mbar to 1050mbar [2]
response time	4 From seconds to 2 minutes(user configuration) [3] Read twice per second [3]
Electrical/mechanical characteristics	
power input	3.2V to 5V(3.3V recommended) Peak current 33mA [4] Average current <1.5mA [4]
power dissipation	3.5mW[4]
Size and external connections	
Terminal post 2×5 0.1", with 1 pin marked in the diagram. Top view (connection surface)	



1	GND	2	N/C
3	3.3V	4	N/C
5	Rx	6	N/C
7	Tx	8	Nitrogen zero point
9	Analog (0.5 to 4V)	10	Air Zero Point

2 Pin # is idle. Pin 4 and 6 are internally grounded and do not require external connections.

The zero point option is used for hardware zero point setting (all low-level active) and can also be controlled by sending commands. Typically, the pins connected to the digital interface are GND, 3.3V, Rx, and Tx.

The analog signal output function can be used when specially specified, otherwise it is idle.

Temperature and humidity measurements [5] Optional temperature and humidity sensors (only available when digital output is used)	
detection mode	Humidity: Capacitive Temperature: band gap
measuring range	-25℃ to 55℃ 0 to 95%RH
resolution ratio	0.08℃ 0.08%RH
Absolute precision 5	+/-1℃ 0℃ to 55℃ +/-3%RH 20℃ to 55℃ +/-2℃ exceeds the full temperature range +/-5%RH exceeds temperature full scale
repetitiveness	+/-0.1℃ +/-0.1%RH

explanatory note：

1. All measurements are made at room temperature standard unless otherwise specified.
2. External pressure calibration is required
3. Filter response coefficients configured by the user

4. Power metering for CO2 sensors that output readings twice per second. Temperature and humidity outputs increase power consumption.

5. Temperature and humidity signals are provided by Sensirion's SHT21 chip. For details, please refer to the relevant technical data