LUXLIGHTING TECHNOLOGY PRIVATE LIMITED.
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RTC Dual Beam NDIR Co2 Sensor
Ultra Low Power CO_2 Sensor For Laboratory Applications

Key Features

The RTC-Co2 is a CO_2 module for OEM applications that represents a breakthrough in low power gas detection making it ideal for battery powered, energy harvesting or wireless applications with tight energy budgets requiring long operating life. This Infrared LED based sensor offers a number of distinctive features over conventional CO_2 sensors.

Key features of the RTC-Co2 CO_2 sensor include:

- Continuous power consumption of 3.5 mW. With reasonable duty cycling (e.g. 15 min) battery life can be extended to 5+ years.
- Measurement ranges of 0-2%, 0-20%, 0-60%, 0-100% (custom range possible with volume order).
- 10 second warm up time.
- Shock and vibration resistant.
- Built in auto calibration feature.
- Options for on-board temperature and humidity measurement and extended temperature operating range of -13 to 131ºF (-25 to 55ºC).
- Simple, closed contact initiation of ambient or zero calibration.
- Runs cool, there is no heat generated that can interfere with temperature or humidity measurements
- Flow through adaptor available.

The Breakthrough…

Conventional CO_2 sensors utilize a small incandescent bulb that generates a lot of heat and light energy in addition to the infrared energy used for the gas measurement. Instead of a light bulb, the RTC-Co2 uses a small light emitting diode (LED) that generates infrared energy only at the wavelength needed to measure CO_2. This is the reason for the dramatically reduced energy use of the RTC-Co2.

LED sensors have always been recognized as idea for low power gas detection but their development has been a great technical challenge. The RTC Co2 developed by a Scotland based company called Gas Sensing Solutions is the very first infrared LED product on the market that is stable enough and economical enough to be sold into measurement and control products.

The photo to the right shows the inside of the sensor with the LED emitter and photo detector at the top of the sensor. The yellow line shows the path of the infrared energy inside the sensor. The LED only emits infrared energy at the wavelength that is absorbed by CO_2. As a result any decrease in light getting to the detector relates to how much CO_2 is in the air. Under normal operation the LED flashes 2 times per second but can be made to flash up to 20 times per second.

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Dimensions

RTC Care:+91 9350831213

Co_2 Sensor

Non-dispersive infrared (NDIR) dual wavelength detector

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Dual-beam technology Co2 Sensor

- Measurement Range : 0-20% CO2.
- Repeatability ± .1% CO2.
- Power Requirements : 7.5 - 15 VDC @ 170 mA max (125 average) Approx. 1.0W with 12V. Input
- Operating Temperature Range 0 - 50° Celsius.
- Operating Humidity Range 0 - 100% RH, non-condensing.
- Voltage Output (linear) 0 - 3 VDC.
- Calibration Single gas.

www.rtcin.com

Specifications

General

CO_2 Detection Method: Non-Dispersive Infrared Optical Sensor with patented gold plated optics and patented solid-state source and detector.
Sample Method: Diffusion or Flow Through
Transmitter Rated Life: minimum 15 years
Operating Conditions: 32 to 122° F (0 to 50°C), 0 to 95% RH (Standard), -13 to 131°F (-25 to 55°C) (extended range)
Storage Conditions: -22 to 158° F (-30 to 70° C)

Performance

CO_2 Measurement Range: 0-5%, 0-30%, 0-60%, 0-100%
CO_2 Accuracy: +/- 3 ppm +/- 3% of reading.
Non Linearity: < 1% of full scale
Calibration: Automatic calibration built in.
Response Time: 4 seconds to 2 minutes (user configurable via filter type and application. Reading updated twice a second.
Pressure Dependence: 0.13% of reading per mm Hg.
Operating Pressure Range: 950 to 1050 bar.
Minimum Run Time: 10 Seconds on duty-cycle operation

Optional Temperature & Humidity Sensor

Note: Only available as a serial output
Method: RH – Capacitive, Temp – Band-gap
Range: -13 to 131°F (-25 to 55°C), 0 to 95% RH
Resolution: 0.08°C, 0.08% RG
Temp Accuracy: ±1.8°F (1°C) @ 0 to 55°C, ±3.6°F (±2°C) full range,
RH Accuracy: ±3%RH @ 68°C to 131°F (20°C to 55°C), ± 5% full range

Power

Input: 3.25 to 15 VDC
Peak Current: 33 mA
Average Current: < 1.5 mA
Power Consumption: 3.5 mW
Wiring Connection: 2 x 5 - 0.1" header

Connection Diagram

RED :Power Suuply : 7.5V to 15V
BLACK : Power Supply : Ground (-)
GREEN : Sensor Output : 0.0 to 3.3V

MRP : INR 35,000/-
One Year Replacement Warranty.
By : RTC, Ready in Stock