

SENSEAIR

SUNRISE

A new generation NDIR sensors

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OPTICAL **SOLID** STATE

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Standard specification

| | |
|--------------------------------------|---------------------------------------|
| Target gas | Carbon Dioxide, Methane |
| Operating principle | Non-dispersive infrared |
| Measurement range (CO ₂) | 400–5000 ppm |
| Accuracy (CO ₂) | ±30 ppm ±3% of reading ^{1,3} |
| Average current | 150µA ^{2,5} |
| Peak current | 125mA |
| Measurement period | Adjustable by host |
| Power supply | 3.05-5.5 V ⁴ |
| Dimensions | 33.9 x 19.8 x 11.8 mm |
| Weight | 4.9 ± 0.1 g |
| Life expectancy | >15 years |
| Operation range | 0–50°C, 0-85% RH |
| Storage temperature | -40 – 70°C |
| Serial communication | UART, I ² C |

Note 1: 15 – 35°C, 0 – 80%RH, after three eight-day periods, each period followed by ABC command set in the Calculation Control byte.

Note 2: Supply voltage 3.3V.

Note 3: Specification is referenced to uncertainty of calibration gas mixtures (±1%).

Note 4: Unprotected against surges and reverse connection

Note 5: Measurement period 16 seconds



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Freedom to sense anywhere

LED technology has long been a holy grail. The collaboration with Asahi Kasei (AKM), the company that also invented the Lithium Battery, has now made it possible to use the technology with sustained performance.

Ultra Low Power does not anymore have to come at the cost of accuracy. Sunrise is the new generation Optical Solid State Sensor.

Choose between:

- Sensor Core
- Sensor onBoard
- Sensor inCase

ULTRALOWPOWER

Thanks to the next generation LED technology Sunrise™ has a ultra low power consumption. 6 times lower than the competing low power NDIR sensor on the market. Average current 150µA^{2,5}.

OPTICALSOLIDSTATE

Electronics with no moving parts makes this sensor robust and resistant to vibrations. Any application with a tough environment or explosion risk is benefited by the solid state design.

MASSPRODUCTION

The design of the sensor is done to optimize the manufacturing process, thus we are staying away from any manufacturing steps that require human handling. The production line is fully automated and the calibration is made in four different steps.

THREEPACKAGES

Sunrise can be delivered as a sensor core - calibrated and ready to mount. But you will find more advantages in our other packages: Sensor onBoard and Sensor inCase. As the names suggest we will design and manufacture the board with the sensor or ready-to-use packaging. The advantage is that calibration can be made after the sensor has been mounted and that comes with extended warranties. We will also take responsibility for the design to be optimized around the sensor function (air flow etc).

SELF-CALIBRATING

Mount and forget your sensor for the next 15 years and it will still be accurate thanks to the built-in self-correcting ABC algorithm. Senseair has used Automatic Baseline Calibration for three decades. About 6 million sensors are providing data every millisecond and every 7th day they will calibrate themselves. With wireless applications it will be even more important to rely on a sensor you can mount and forget. Sunrise will continue the line of success.

HIGHPRECISION

There is a fundamental relationship between invested power and measurement resolution in all electronic sensors. The more electrical energy you invest in the measurement, the more accurate reading you will get. Therefore, obtaining high resolution measurements using a low power sensor is a challenge. Sunrise is the first NDIR sensor with LED technology that truly saves power while maintaining a high precision. Accuracy (CO₂) ±30 ppm ±3% of reading.





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