S8 Commercial

The world´s smallest CO_2 sensor with NDIR-technique

More than 25 years experience of research and development within the field of infrared gas sensing has now brought us the smallest CO_2 sensor with NDIR-technique in the world – *S8 Commercial*. The new sensor has excellent performance such as high accuracy and low power consumption.

S8 Commercial is designed for high volume production with full traceability by sensor serial number on all manufacturing processes and key components. Every sensor is individually calibrated and is provided with UART digital interface. The sensor has an estimated life time of more than 15 years.

STANDARD SPECIFICATION

Measured gas	Carbon dioxide (CO_2)
Operating Principle	Non-dispersive infrared (NDIR)
Measurement range CO_2	400–2000ppm
	Up to 10000ppm extended range
Accuracy CO_2	±30ppm ±3% of reading [1]
Maintenance	Maintenance-free
Life Expectancy	>15 years
Power supply	4.5–5.25VDC
Operation temperature range	0–50°C
Communication	UART (Modbus)
Dimensions Max. (L x W x H)	33.4 x 19.9 x 8.5mm
Power consumption	300mA peak, 30mA average
Response time	2 minutes by 90%

Note 1: Accuracy is specified over operating temperature range. Specification is referenced to certified calibration mixtures. Uncertainty of calibration gas mixtures (±1% currently) is to be added to the specified accuracy for absolute measurements.

APPLICATION

S8 Commercial is a module that is designed for simple integration into products.
S8 Commercial can be used in a wide range of applications such as in ventilation control to improve energy savings and to assure a good indoor climate. Other fields of use are personal safety and measurements to increase process yield and to increase economic value in bio-related processes.

KEY BENEFITS

- Miniature size
- Individually calibrated
- Maintenance-free
- Long term stability
- Low power consumption

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S8 Commercial Technical Specification

General Sensor Performance:

Required storage/operation environment	Non-corrosive [1] and non-condensing
Sensor lifetime expectancy	>15 years
Maintenance	Maintenance-free for normal indoor applications with Senseair ABC ON [2]
Self-diagnostics	A full system test is executed automatically every time the power
.....	is turned ON

Operative environment required for keeping calibrated and specified accuracy in gas measurement:

Operative temperature range	0–50°C
Operative relative humidity range.....	0–85%RH, non-condensing

Electrical Properties:

Power supply	4.5–5.25V unprotected against surges and reverse connection
Power consumption	300mA peak, 30mA average

Mechanical Properties:

Electrical Connections	DVCC, G+ and G0
Dimensions.....	33.4 x 19.9 x 8.5mm (Max. Length x Width x Height)

CO_2 Measurement:

Operating principle.....	Non-dispersive infrared (NDIR)
Measurement Range	400–2000ppm, up to 10000ppm extended range [3]
Accuracy.....	±30ppm ±3% of reading [4]
Measurement interval	2 seconds

Note 1: SO_2 enriched environments excluded.
Note 2: Optional calibrations are background calibration, which requires that the sensor is exposed to fresh air (400ppm CO_2) and zero calibration, which requires the sensor measuring cell to be completely evacuated from CO_2 e.g. by exposing it to Nitrogen or Soda Lime CO_2 scrubbed air.
Note 3: Optional
Note 4: Accuracy is specified over operating temperature range. Specification is referenced to certified calibration mixtures. Uncertainty of calibration gas mixtures (±1% currently) is to be added to the specified accuracy for absolute measurements.