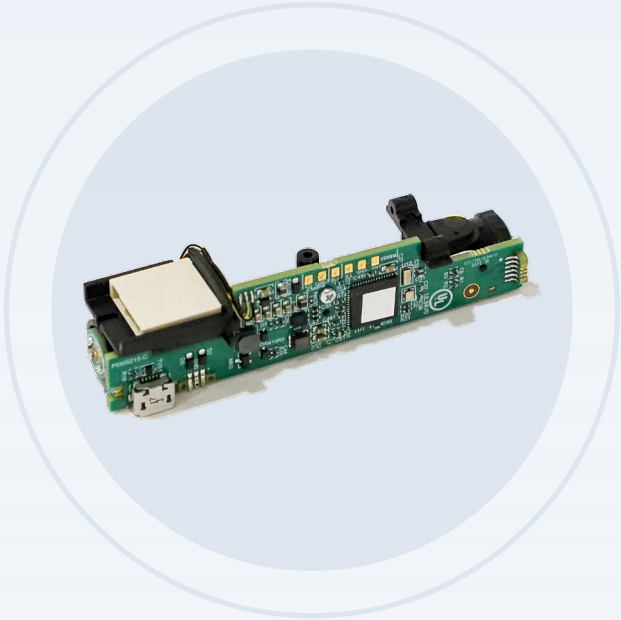
DATASHEET NO027 Rev.A

CO000023 - OCIEngine CO_2 NDIR GAS SENSOR

OCIEngine is an **infrared spectrometer that measures carbon dioxide (CO_2) in air.**

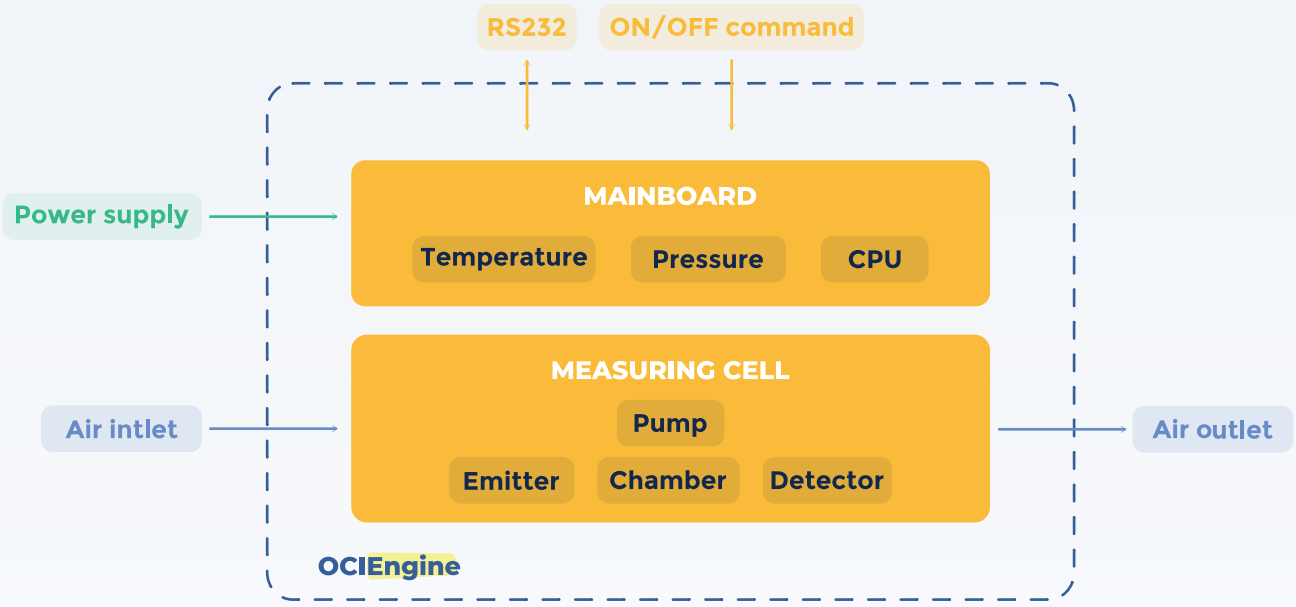
Infrared radiation passes through the sensor's measuring cuvette. When air is introduced into the cuvette, the molecules of interest absorb part of the radiation, reducing the intensity of the optical signal. The concentration of the gas can then be deduced according to Beer-Lambert's law.



ADVANTAGES

- Thermally stabilized tank for sampling in wet gases
- Fast and consistent measures at all concentrations
- High selectivity with minimal interferences
- Direct flow measurement capability
- Long-term precision and reliability
- Low power consumption
- Compact design for embedded systems

SENSOR ARCHITECTURE



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Technical specifications

CO2 DETECTION

Unit of measurement	% (others on resquest : ppm)
Measurement range	From 0 to 7%
Measurement accuracy	0,02% + 2% reading
Sampling period	125 ms
Response time	3s, at a flow rate of 1L/min

SAMPLING CHARACTERISTICS FOR EXHALED AIR ANALYSIS APPLICATION

Test duration	4500 ms minimum
Flow rate range	From 0,1 to 1,5 L/min
Air inlet	Minimal relative pressure to activate CO2 measurement: 0.3 mbar Minimal relative pressure during the test to have CO2 measurement valid: 0.2 mbar Maximal relative pressure at measuring cell inlet port: 10 millibars
Flow rate range	From 0,1 to 1,5 L/min

ENVIRONMENTAL CONDITIONS

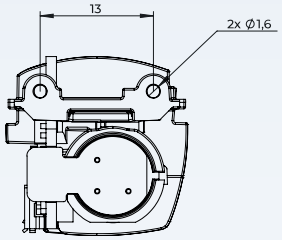
Operating conditons - Temperature	From 0°C to 50°C
Storage conditions - Temperature	From -10°C to 70°C
Operating conditions - Humidity	< 100% relative humidity (RH), not condensing

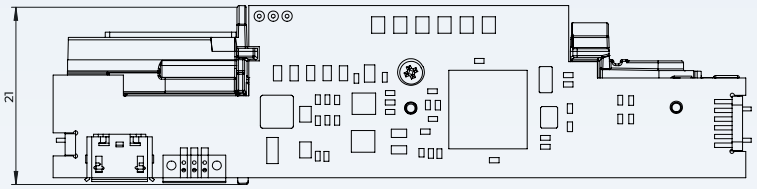
ELECTRICAL CHARACTERISTICS

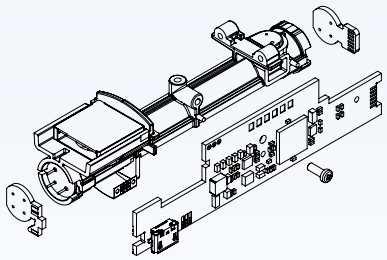
Supply voltage	3,3 VDC min 4,2 VDC max
Input current	1,5A max

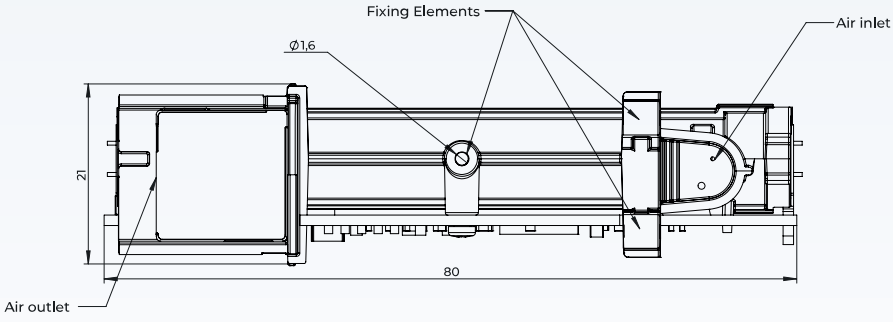
MECHANICAL CHARACTERISTICS

Dimensions	21 x 21 x 80 mm
Weight	17 g
External plastic casing	ABS PC-UL94V0
Fixing parts	3 apertures (Ø 1.6 mm) compatible with self-tapping screws (1.8 mm recommended) to fix the OCIEngine sensor









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