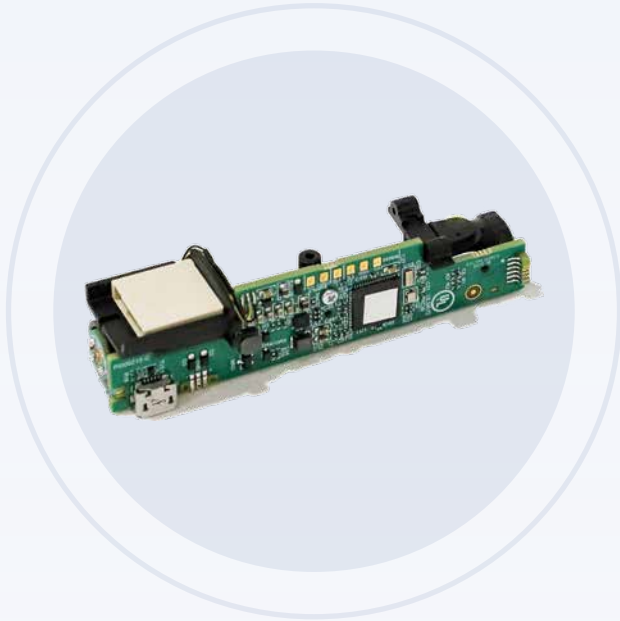


# CO000033 - OCIEngine Nitrous Oxide NDIR GAS SENSOR

OCIEngine is an **infrared spectrometer that measures nitrous oxide (N<sub>2</sub>O) in air.**

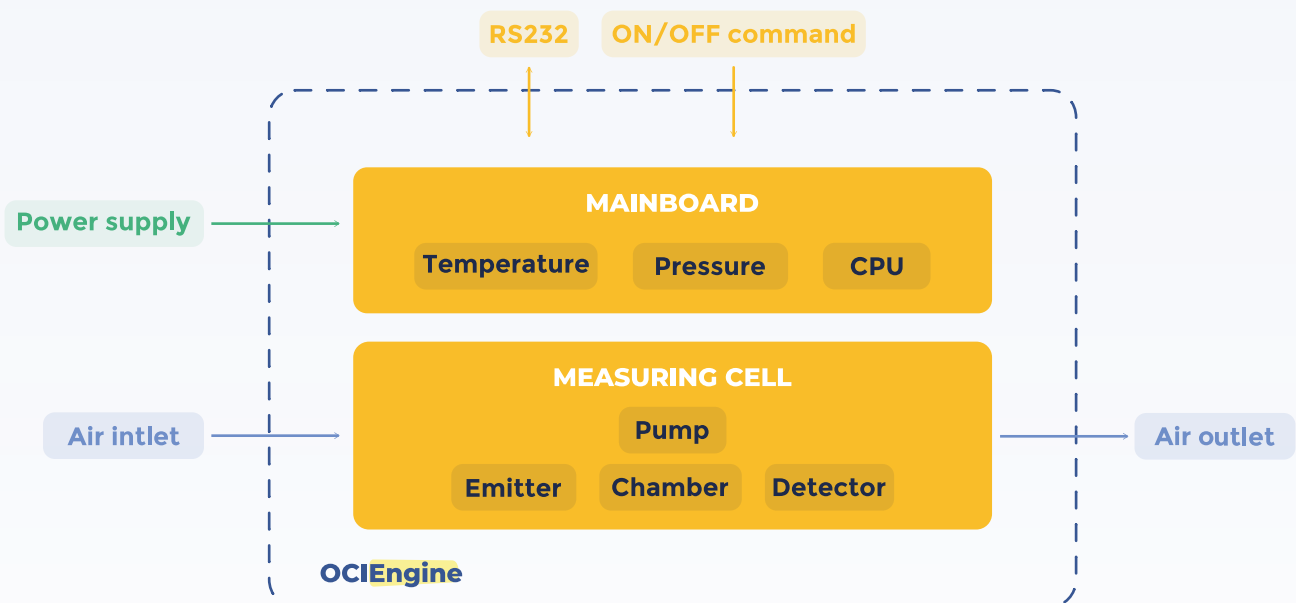
Infrared radiation passes through the sensor's measuring cuvette. When air is introduced into the cuvette, the molecules of interest absorb part of the radiation, reducing the intensity of the optical signal. The concentration of the gas can then be deduced according to Beer-Lambert's law.



## 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



# Technical specifications

## NITROUS OXIDE DETECTION - MODEL NUMBER CO000033

<b>Unit of measurement</b>	ppm
<b>Measurement range</b>	0 - 1000 ppm
<b>Detection limit (3<math>\sigma</math>)</b>	200 ppm
<b>Repeatability</b>	0,5% Full Scale + 1% reading

## SAMPLING CHARACTERISTICS FOR EXHALED AIR ANALYSIS APPLICATION

<b>Test duration</b>	4500 ms minimum
<b>Flow rate range</b>	From 0,1 to 1,5 L/min
<b>Air inlet</b>	Minimal relative pressure at measuring cell inlet port: 0.3 millibars Maximal relative pressure at measuring cell inlet port: 10 millibars
<b>Sampling period</b>	34 °C +5°C
<b>Sampling humidity</b>	>95% Human Breath

## ELECTRICAL CONDITIONS

<b>Supply voltage</b>	3,7 VDC min 5,5 VDC max
<b>Input current</b>	1,5A max
<b>Communication interface</b>	RS232 protocol (other on request) Solder pad connection (recommended cable sections : $\leq 0.13 \text{ mm}^2$ AWG $\geq 26$ )

## ENVIRONMENTAL CONDITIONS

<b>Operating conditons - Temperature</b>	From 0°C to 50°C
<b>Storage conditions - Temperature</b>	From -10°C to 70°C
<b>Typical starting time</b>	60s

## PACKAGE INFORMATIONS

<b>Dimensions</b>	21 x 21 x 80 mm
<b>Weight</b>	17 g
<b>External plastic casing</b>	ABS PC-UL94V0
<b>Fixing parts</b>	3 apertures ( $\varnothing 1.6 \text{ mm}$ ) compatible with self-tapping screws (1.8 mm recommended) to fix the OCIEngine sensor

