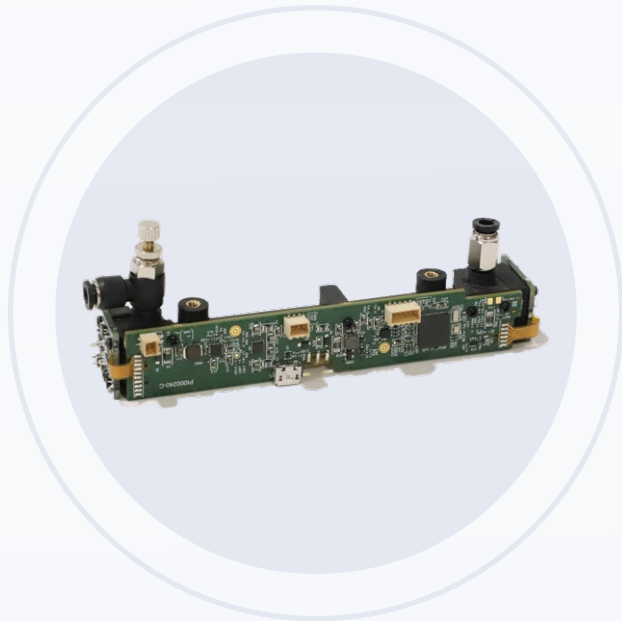


# CO000035 - OCIEngine PRO N2O NDIR GAS SENSOR

OCIEngine PRO is an **infrared spectrometer that measures nitrous oxide (N2O) in air.**

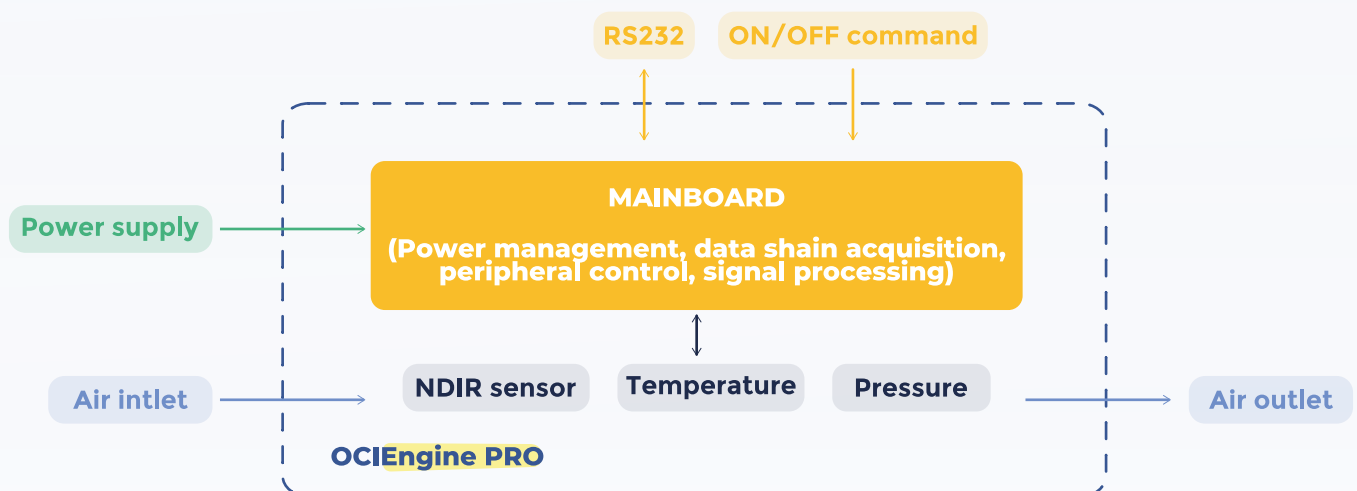
Infrared radiation passes through the sensor's measuring cuvette. When air is introduced into the cuvette, the molecules of interest absorb part of the radiation, reducing the intensity of the optical signal. The concentration of the gas can then be deduced according to Beer-Lambert's law.



## 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

**ETHANOL DETECTION** (Test conditions: 23°C, 50%RH, 1013 mbar)

<b>Unit of measurement</b>	ppm
<b>Measurement range</b>	From 0 to 1000 ppm
<b>Repeatability (3<math>\sigma</math>)</b>	0.5% Full Scale+ 1% reading
<b>Linearity error</b>	1% reading
<b>Long term drift (span)</b>	1% reading
<b>Pressure effect</b>	0.05% reading /mbar
<b>Temperature effect</b>	0.1% reading / K
<b>Detection limit (3<math>\sigma</math>)</b>	0.5% full scale
<b>Cross sensitivity</b>	Consult manufacturer

## SAMPLING CHARACTERISTICS

<b>Sampling period</b>	125 ms
<b>Response time</b>	2s ( $\tau=63\%$ ), at a flow rate of 1 L/min
<b>Pressure range</b>	Minimal relative pressure at measuring cell inlet port: 0.3 millibars Maximal relative pressure at measuring cell inlet port: 10 millibars
<b>Flow rate range</b>	From 0,1 to 1,5 L/min

## ENVIRONMENTAL CONDITIONS

<b>Operating conditions</b>	From 0°C to 40°C for breath analysis From -20°C to 70°C for other applications
<b>Storage</b>	From -20°C to 70°C
<b>Typical starting time at 23°C</b>	1 minute (30 minutes at full specifications)
<b>Humidity</b>	< 100% relative humidity (RH), not condensing

## ELECTRICAL CHARACTERISTICS

<b>Supply voltage</b>	3,7 VDC min 5,5 VDC max
<b>Input current</b>	1,5 A max
<b>Communication interface</b>	RS232 protocol: Voltage level: $\pm 5,5V$ ; 3 wires mode x3 Pico-SPOX MOLEX connector (2, 3 and 5 contacts)

## MECHANICAL CHARACTERISTICS

<b>Dimensions</b>	125 x 30 x 22mm
<b>Weight</b>	~20 g
<b>External casing</b>	Plastic
<b>Fixing parts</b>	2 tapped holes for M3 fixing. Length max=5mm

