Your real time multi-gas environmental monitoring solution

vOCSens
Smart sensing solutions

A new way of sensing

MSEM-10® is your smart, autonomous gas sensor module for environmental monitoring and process optimization. It can contain multiple gas sensing elements, a temperature and humidity sensor, all in one module. By connecting to the Internet of Things (IoT), MSEM-10 provides actionable gas concentration data.

Achieve your goals with actionable data

Environment   Compliance   Process optimization

Zero point adjustment

The MSEM-10® software algorithm performs zero-point adjustments based on your typical environment. It takes into account drift due to temprature, humidity and the aging of the sensing element.

Remote monitoring

MSEM-10® is fully remote-controlled thanks to its wireless communication capabilities (LoRaWAN), making it ideal for agricultural IoT applications.
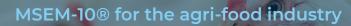
Easy maintenance

Based on the performed bump test, you can adjust the range of the gas measurement by adding your calibration parameters in the software.

They use MSEM-10®

ILVO

ILVO, the Flemish regional research institute for the agricultural industry, was looking for innovative solutions to **help industrial farmers to better measure and manage nitrogen emissions.** The institude conducted several pilot studies in barns using MSEM-10® and was able to **validate the module's effectiveness and ease of use** (plug & play).

How MSEM-10® works

Data collection

Simply install MSEM-10® where you need gas sensing

Data calibration & enhancement

Our algorithms transform collected raw data into actionable information

Data exploitation

Automatically import and store your smart data where you need them thanks to our API

Technical specifications

- Choice of multiple gas sensing technologies:
  - NH3 0-100 ppm (electrochemical and/or chemiresistive)
  - CO2 0-5000 ppm (non-dispersive infrared)
  - CH4 (on request)
- **Dimensions:** compact (130 x 114 x 50mm³) and lightweight< 400 g
- **Housing:** IP64
- **Included battery:** Li-ion 3500 mAh
- **Power supply:** M8 connector 12V/24V DC 1.5A
- **Autonomy:** depending on the frequency of gas measurements & uploads
- **Measuring period:** each 10 minutes, can be adapted over the air
- **Operating conditions:** -20 – 60 °C, 10 – 95 % RH
- **Data output:**
  - **Wireless communication:** LoRaWAN (upload period down to 5 minutes, 288 messages a day), male SMA antenna, 0.01 – 10 km range
  - **Serial communication:** UART
- **Other measured environmental parameters:** temperature (-20 – 60 °C, ±1 °C), humidity (10 – 95 % RH, ±5 % RH)
- **Alarm system:** defined thresholds based on safety exposure limits (optional)
- **Data integration:** dedicated algorithms and API
- **Sensing elements lifespan:** more then 3 years depending on the environmental conditions

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