

Atmospheric Air Quality probe



Usage

This probe is intended to measure the **Atmospheric Air Quality (AAQ)**.

Energy saving strategies (Free cooling), remediation and indoor air quality control strategies can be optimized taking into account OAQ.

In addition, manual ventilation operations by opening windows can also be optimized by informing the occupants of the OAQ for each facade and each floor (see EP5000 IAQ probe).

The increasing airtightness of buildings requires controlled air renewal to guarantee productivity, comfort and health, and taking into account the quality of so-called "new" air makes it possible to optimize the means of remediation for a better energy efficiency and sobriety (recycling vs. dilution).

Local authorities can also use these probes to assess the impact of their policy (heating networks, direction of traffic, traffic fluidity and red light synchronization, vegetation, traffic restrictions, support for energy renovation work on buildings, etc.).

The AAQ probe uses sensor modules with a lifespan of at least 10 years.

Sensor modules are all plug and play and easily replaceable at a low cost. The modularity of the probe (choice of sensor modules) makes it possible to meet different uses and needs.

This probe fits easily and discreetly on a facade, a pylon...

The modular architecture allows the probe to be interfaced with different home automation, IOT or industrial systems (RS485 Modbus, EnOcean, LoRaWAN, NB IOT).

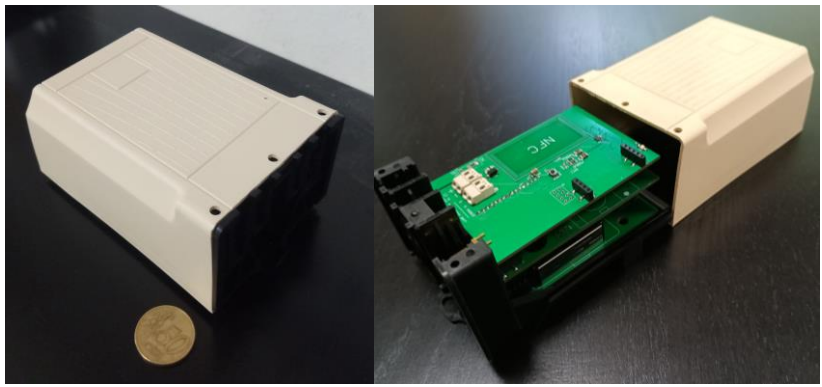
Built-in self-test: indicates sensor module failures and their expiry (preventive maintenance on theoretical end of life).

Sensors fitted as standard:

- PM1, PM2.5 and PM10
- Humidity (absolute and relative),
- Temperature,
- Atmospheric pressure

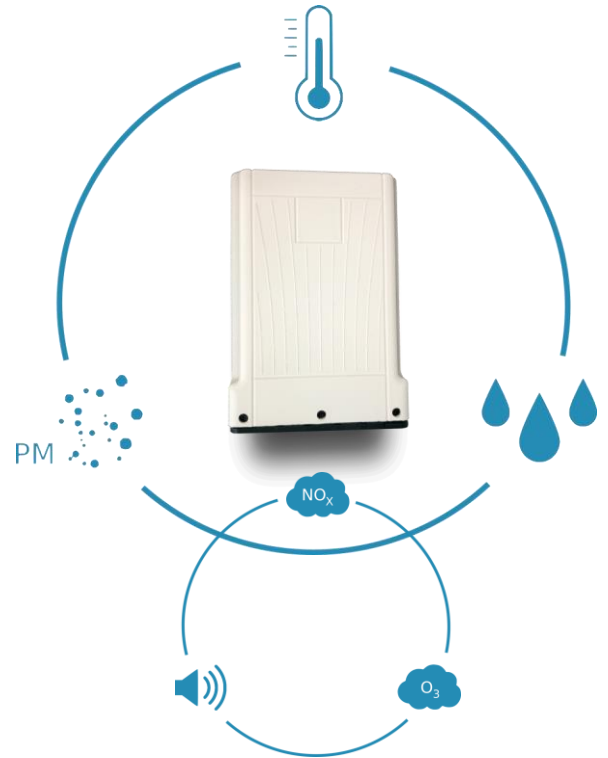
Optional sensors (3 max):

- Noise (average and peak)
- O3
- NOx + O3 (by software with O3 module)
- NOx (available soon, by software with O3 module)
- H2S (under dev.)
- SO2 (under dev.)
- Sulphurous odors
- Ammonia (under dev.)



Technical characteristics

Protocol	Modbus or EnOcean or LoRa
Power supply	12 to 30V DC
PM Sensor	Laser scattering
PM range	0.3-10µm - 0 ~ 1000 µg/m³
PM Classification	PM1, PM2.5, PM10
Temperature Range	-20 / +51.5°C
Humidity Range	0-99%
PM2.5 accuracy	< 50µg/m³: ± 10µg/m³ 50~100µg/m³ : ± 15µg/m³ > 100µg/m³: ± 15% reading
Temperature accuracy	0,3°C
Humidity accuracy	2% on 10% to 90% RH range
Sensors Lifespan	≥ 10 years



Optional sensors

O3	20 à 500ppb
NOx	20 à 500ppb
NOx + O3	20 à 500ppb
H2S	Confidential
SO2	Confidential
Ammoniac	Confidential
Noise resolution	1 dB
Noise range	100 à 10KHz, 18 to 120dBA

Metrology

Best PM measurement accuracy at the 2018 Airlab micro sensor challenge (rated 98/100 of regulatory measurements in PM2.5)

