

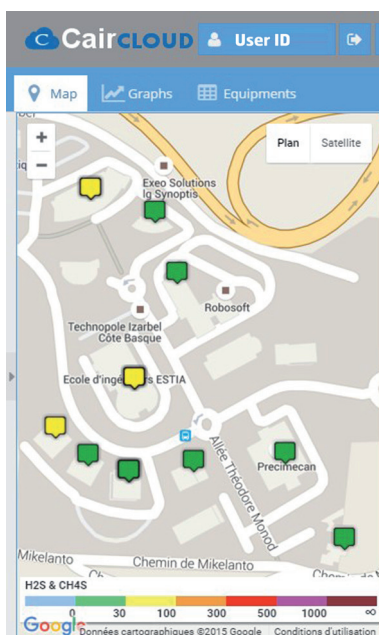
Sensor-based air quality monitoring micro-stations



DESCRIPTION:

Our sensor **Cairsens**[®] is an integrated system consisting of a miniaturized measuring cell (amperometric, but also NDIR, PID...), a dynamic air sampling with a patented filter and an electronic circuitry allowing to measure and translate the smallest variations in concentration levels. The reliability of the measurement is achieved by limiting the effect of humidity variations by using a gas specific inlet filter combined and thanks to the dynamic air sampling system. The high quality of our **Cairsens**[®] allows specific measurement, comparable to the reference methods (tested notably by the US-EPA, the JRC, etc.).

The miniaturization of the **Cairsens**[®] and its very low power consumption allow to deploy them outside really easily for several days (**Cairtub**[®]) or integrated in our autonomous and wireless communicating stations for real-time data access (**Cairnet**[®]).

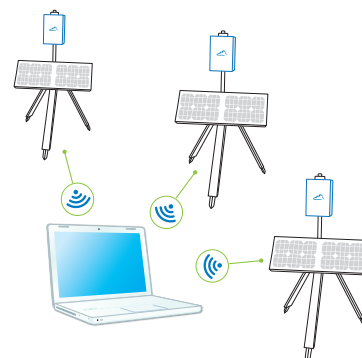


MAIN APPLICATIONS :

- Monitoring fugitive emission like odour on WWT plants,
- Dynamic pollution mapping
- Ambient air pollution study
- Indoor air quality measurement
- Chronic exposure evaluation
- Individual health survey
- Epidemiologic study...

FEATURES:

- Simple, reliable, cost effective
- Ppb levels detection
- No maintenance required
- No need for re-calibration
- Autonomous version (solar panel)
- Ready to operate
- Lifetime duration: 1 year



Air quality monitoring sensors network

SPECIFICATIONS:

- LCD display with concentration levels of the measured pollutants
- Internal data storage: 11 days minimum for 1 min. data, up to 1.5 years for hourly acquisition
- Internal microprocessor for value and time calculation
- Low battery indication
- Operating time: 24 to 36 hours when fully charged for USB versions (daily recharge for optimal use)
- Power supply: 5VDC /500 mA rechargeable by USB via PC or 220V/110V with 5V adaptor (solar panel option)
- Output: USB or UART (Analog signal on demand)
- Dimensions: diameter 32 mm (1,26"), length 62 mm (2,44")
- Weight: 55 g (1,94 oz)
- IP 42 (according IEC60529)
- Storage condition: 5 to 20°C (41°F to 68°F), 10 to 90% RH, mbar 1013 3 200 (psi 14,69 3 2,90)
- Operating condition: depending of the sensor, in general -20°C to +45 °C (-4°F to 113°F), 10 to 90% RH, mbar 1013 3 200 (psi 14,69 3 2,90)
- Electric standards: CEI/UL/CSA N°61010-1: 2008 / EN 61010-1:2001

* Detailed specification per sensor on request

	Ranges :	Detection limit :
O ₃ / NO ₂	0-250 ppb	20 ppb
NO ₂	0-250 ppb	20 ppb
CO	0-20 ppm	0.05 ppm
H ₂ S / CH ₄ S	0-1000 ppb / 0-20 ppm / 0-200 ppm	10 ppb / 30 ppb / 200 ppb
NH ₃	0-25 ppm	0.5 ppm
SO ₂	0-1000 ppb	50 ppb
CH ₂ O / Organic solvents	0-1000 ppb	10 ppb
nM VOC	0-16 ppm	10 ppb
CO ₂	0-5000 ppm	1 ppm



MAIN OPTIONS:

Cairtub® : Protective housing for stand-alone outdoor application, 21 days power autonomy, easy to install or move. Up to 3 sensors integrated.

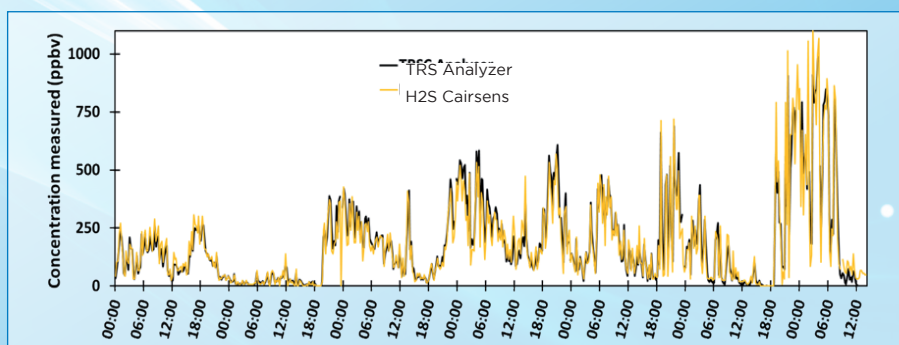
Cairnet® : Protective housing - with wireless communication, autonomous using solar panel - for online data acquisition. Up to 4 sensors integrated.

Software: Real-time data management and display on a fixed PC (Cairmap suite) or via Internet access (Caircloud), with numerous optional features : Meteo data integration, alarms management, automated reports, modelling software exports, etc.)

MEASUREMENT PRINCIPLE

The amperometric sensor consists of three electrodes: the working electrode (anode), the counter electrode (cathode) and the reference electrode. The gas to be analyzed is diffused through a permeable membrane towards the sensitive electrode. Depending of the gas, oxydation takes place at the anode, or reduction at the cathode. The electrical signal generated between the two electrodes is proportional to the concentration.

CASE STUDY : H₂S MONITORING WITH CAIRSENS



Cairpol has a policy of continuous improvement of its products and we reserve the right to upgrade or change specifications without prior notice.

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