

SENSOR-BASED MINI-STATIONS

AIR QUALITY MONITORING SYSTEMS

“40 years of experience in the field of environmental monitoring to the benefit of our micro-sensors”

Cairnet DATA+ is a real-time air quality monitoring station including up to six Cairsens® micro-sensors. It also monitors environmental parameters **such as wind speed and direction, T°C, RH% and Pa**. The device has been designed to leverage local communication and features main power supply as well as cellular communication.

The system can be easily connected to our cloud solutions or customer software platform by using APIs.

The mini-station enables you to cost-effectively monitor dust and gas pollution and gives a complete picture of the environmental impact of your operations.



KEY BENEFITS

- Data **security** and **privacy** thanks to direct & local communication to the reporting platform
- Accurate and reliable measurements across a broad range of industries and applications
- Operating cost savings: process adjustment & improvement of local communication
- Gives a complete picture of the environmental impact of your operations

KEY FEATURES

- Local and remote communication: 4G **via local server**, Wi-Fi, TCP-IP Modbus, 4-20 mA
- Indoor/outdoor compact & easily deployable housing
- Designed to acquire data from complementary sources such as **“all in one” weather stations, noise sensors**, etc.
- Integrated manifold: **dynamic sampling**
- Limited maintenance: annual replacement of sensor only
- Protection of electronic components against the effects of corrosion

APPLICATIONS

POLLUTION CONTROL OF INDUSTRIAL SITES / HEALTH AND SAFETY:

- WWTP, recycling
- Pulp and paper manufacturing
- Refineries
- Manufacturing plants and gas transport

INDOOR AND OUTDOOR AIR QUALITY MONITORING:

- Urban areas/cities: road traffic, schools, tunnels
- Complement to reference Air Quality Monitoring Network
- Industrial areas: airports, ship terminals, manufacturing plants



Cairsens® sensors are manufactured in France and calibrated in our metrological laboratory using Standard Reference AQMS monitors. Each Cairsens® is shipped with a calibration certificate.

INSTALLATION OPTIONS:

SIMPLE MONITORING AND MANAGEMENT OF YOUR SITE'S PROCESSES & AIR POLLUTION

LOCAL DATA MANAGEMENT: 4-20 mA OUTPUT SIGNALS



- Local communication to on-site reporting platform
- Allows management of minimum 8 parameters thanks to one 4-20 mA analog converter

LOCAL DATA MANAGEMENT: MODBUS TCP-IP



- Local communication to the reporting platform
- On-site reporting using eSAM interface or third party reporting platform
- Data security and privacy guaranteed
- Compatible with various 'all-in-one' weather stations

LOCAL DATA MANAGEMENT: WIRELESS COMMUNICATION



- Included features:**
- Data visualisation
 - Data export
 - Report edition
- Optional features:**
- Administrator management
 - Threshold alert via emailing
 - Automatic Data Validation (ADVAL)
 - Expert data export
 - RestFul API...

- Local wireless communication with XR or third party reporting platform
- Data security and privacy guaranteed
- Compatible with various 'all-in-one' weather stations

SENSOR-BASED MINI-STATIONS

MEASURABLE PARAMETERS

Pollutant	Range (ppb)	Certified detection limit (ppb)*	Resolution (ppb)	Order Codes
NO ₂	0-250	20	1	A40-0405
O ₃ / NO ₂	0-250	20	1	A40-0406
SO ₂	0-1,000	50	1	A40-0407
CO	0-20,000	50	1	A40-0404
H ₂ S / CH ₄ S	0-1,000	10	1	A40-0401
	0-20,000	30		A40-0402
	0-200,000	200		A40-0403
NH ₃	0-25,000	500	1	A40-0408
nmVOC	0-16,000	500	1	A40-0409
	0-2,000	200		A40-0410
PM10 / PM2.5 / PM1	0-1000 µg/m ³	< 5 µg/m ³	0.01 µg/m ³	A40-0414

*They are delivered with a calibration certificate.



CAIRNET DATA+ TECHNICAL SPECIFICATIONS

Power supply (included)	12 VDC / 2.5 A						
Internal data logger	Microprocessor for data acquisition, power and communication management, etc. Based on eSAM software						
Wireless communication	Wi-Fi, Cellular technology LTE / 4G or more (SIM card, not provided) Regulatory compliance: R&TTE directive 1999/5/EC, Japan JRF/JPA - FCC - IC						
Data storage	<ul style="list-style-type: none"> Internal storage on micro SD card of all data in case of loss of cellular communication Cairsens® internal memory 						
Mounting	Fixation kit for pole (∅ 50 mm max) included						
Dimensions of the Cairnet® housing with fixation kit & antenna	300 x 215 x 257 mm (LxHxW)						
Dimensions of the outdoor power supply (included)	150 x 50 x 150 mm (LxHxW)						
Weight of the Cairnet® housing	4 Kg						
Weight of the outdoor power supply	1 Kg						
Environmental operating conditions	-20°C to +50°C / RH 10% to 90%						
Option: ultrasonic anemometer (article code A40-0220)	<table border="0"> <tr> <td>Wind speed:</td> <td>Wind direction:</td> </tr> <tr> <td>• Range: 1 - 40 m/s</td> <td>• Range: 0 - 359°</td> </tr> <tr> <td>• Sensitivity: 0.13 m/s</td> <td>• Sensitivity: +/- 1.5°</td> </tr> </table> <ul style="list-style-type: none"> Battery 600mA / 3.2 mV rechargeable via solar panel (integrated) Autonomy: 7 days Weight & size (sensor head + tube): 290 g / ∅ 64 mm - height 400 mm IP67 Rating 	Wind speed:	Wind direction:	• Range: 1 - 40 m/s	• Range: 0 - 359°	• Sensitivity: 0.13 m/s	• Sensitivity: +/- 1.5°
Wind speed:	Wind direction:						
• Range: 1 - 40 m/s	• Range: 0 - 359°						
• Sensitivity: 0.13 m/s	• Sensitivity: +/- 1.5°						
Option: 4-20mA analog output	Integrated in waterproof housing for up to 8 outputs.						

