

Air Quality & Risk of Contamination



Minimize risk by monitoring the ambient air on your premises

Are your premises correctly ventilated? To ensure a healthy environment, check your ambient air quality regularly with the CA 1510 tester and the CA 1227 thermo-anemometer.

Seeing the risk of Covid-19 transmission via the air, and particularly through microdroplets, it is natural to wonder about the impact of indoor air quality on virus propagation inside a building.

In addition to the rules in force concerning distancing and protection, what are the measurement systems available to check that your premises are correctly ventilated, particularly during winter?

CO₂ logger

Temperature

Humidity

Numerous scientific studies have shown that aerosols are one of the main vectors for virus transmission, including Sars-CoV2 (Covid 19). Active viral particles may float for longer and farther than initially believed, so they represent a potential hazard. **In closed rooms, the risk of infection is usually greater than outdoors, where the particles are dispersed by the wind.**

In premises accessible to the public such as schools, kindergartens, offices, seminar rooms, workshops, public transport, hospitals, etc., social distancing is not sufficient on its own. There is a possible risk of infection in rooms which are insufficiently ventilated or where it is not possible to renew the air.



Example of measurement with a CA 1227 thermo-anemometer

What are the solutions?

Check the ventilation, air renewal, etc.

Upstream, it may be a good idea to measure the air speed or flow rate on the system which blows, recirculates or extracts air from a room and check the required levels. The recommendations seek to group the precautionary measures to be implemented in terms of ventilation around the following major principles:

- increasing air intake and extraction
- limiting recirculation of indoor air, giving priority to “new” air intake
- favouring natural ventilation by opening the windows

Increased ventilation may reduce the concentration of virus-contaminated aerosols present in ambient air. Ventilation can be boosted notably by increasing the frequency, extending the ventilation time or increasing the air volume flow rate.

Ventilation quality can be checked by measuring the CO₂ level. The target CO₂ concentration may differ according to the country, but the **WHO** recommends a value below 1,000 ppm.

Measure the CO₂ concentration

Outdoor air contains approximately 0.04 % CO₂ usually expressed as 400 ppm (parts per million). In indoor environments, human activity (respiration) may quickly raise this concentration, reaching values greater than 1,500 ppm (meeting rooms or classrooms, for example).

Ensuring good indoor air quality means having a correctly-sized ventilation system capable of reducing the concentrations of CO₂ and aerosols in the room.

CO₂ monitoring has proven to be an excellent indicator of air renewal efficiency.

Good practices for CO₂ measurement

The instrument should preferably be set up at a distance of 50 cm to 2 metres above the ground. In practice, it is placed in a secure location with access to a power socket if required. It must also be positioned at least 50 cm away from any intense heat sources (heating emissions) or direct sunlight.

The instrument must not be set up in the direct flow of air from outdoors (windows), or close to the entry door. The CO₂ level fluctuates during the day, depending on the rate of occupancy of the premises, the activities carried out there and the efficiency of air renewal. For these reasons, recording functions and threshold overrun indications are essential features.





With its large, two-colour backlit display, the CA 1510 can be used to measure and view 3 parameters simultaneously (CO₂, temperature and relative humidity). To simplify its use, there is built-in help for interpretation of the level of comfort, based on the level of CO₂ and hygrothermal comfort criteria.



If the mean CO₂ concentration exceeds 1,000 ppm, the screen lighting flashes orange.



Above 1,700 ppm, the screen lighting flashes red.

Main specifications:

- Simultaneous monitoring and recording of CO₂, temperature and relative humidity
- Storage of up to 1 million measured values
- Compact and stand-alone for stationary or mobile measurements
- Excellent battery life thanks to its Energy Saving mode (ECO): for fixed battery use, the product performs measurements every 10 min during a programmable time range of up to one year.
- USB mains adapter for continuous measurements
- On-site calibration kit
- The CA 1510 can be used to check that the ventilation is appropriate



Numerous mounting possibilities: magnetized, with padlockable wall-mount, with desk stand or suspended on a wall slot.



SOFTWARE AND INTERFACE

Two communication modes are available: USB or Bluetooth, for configuration of the recordings, remote display on PC or Android™ tablet, data display as graphics or value tables, data export to Excel and report generation

Data Logger Transfer software
available as standard



Android-compatible application
available from the Play Store



TECHNICAL SPECIFICATIONS

CA 1510

CO₂ measurements	Principle / Sensor	Non-dispersive infrared technology / Dual-beam infrared cell
	Measurement range	0 to 5,000 ppm
	Uncertainty / Resolution	± 50 ppm ± 3 % of measured value / 1 ppm
Temperature	Sensor	CMOS
	Measurement range / Accuracy / Resolution	-10 °C to +60 °C / ± 0.5 °C / 0.1 °C
Humidity	Sensor	Capacitive
	Measurement range / Accuracy / Resolution	5 to 95% RH / ± 2 % RH / 0.1 % RH
Use	Spot measurement	Quick measurement and display of CO ₂ , temperature and relative humidity values
	Monitoring	1D MODE: visual and/or audible CO ₂ confinement indicator
		3D MODE: Indication of optimum comfort area based on hygrothermal criteria and CO ₂ concentration
		ECO: measurements every 10 min over a programmable time range providing a battery life of one year
Logger	Manual or programmed triggering	
General technical specifications	Recording intervals	Customizable from 1 min to 2 hrs
	Storage	1 million measurements
	Functions	Backlighting, HOLD, Min/Max
	Communication	Bluetooth or USB
	Mounting	Magnetized, wall mount, slot for suspension
	Software	DL Transfer: real time, data export
To order	Charcoal grey model reference	P01651010
	Grey and white model reference	P01651011

State at delivery

1 USB-micro USB cable 1.80 m long, 1 quick start guide, 1 mini CD containing the Data Logger Transfer software, the user's guides and 1 verification certificate

Accessories

On-site calibration kit (can be integrated in the hard case).....	P01651022
Hard case	P01298071
Desk stand	P01651021
Wall mount for logger, white	P01651020
Wall mount for logger, black.....	P01651024
USB mains adapter	P01651023
USB-Bluetooth adapter	P01102112

CA 1227

Sensor	Rotating vane / optical detection	
Speed	Measurement range	0.50 m/s to 27.0 m/s (98.0 to 5314.0 fpm)
	Intrinsic uncertainty	± 3 % of reading ± 0.1 m/s
Flow rate	Measurement range	0.00 to 2,999 m ³ /h
	Intrinsic uncertainty	± 8 % of reading
Temperature	Sensor	CTN
	Measurement range	-20.0 °C to +50.0 °C/ -4 °F to +122 °F
	Intrinsic uncertainty	0 to 50 °C: ± 0.8 °C / -20 °C to 0 °C: ± 1.6 °C
General technical specifications	Recording	Manual triggering and stop or programmed recording
	Storage	More than 1 million points
	Other functions	Min-Avg-Max-Hold
	MAP mode	Mapping of airspeeds measured
	Battery life	8 days of recording
To order	Interfaces	2 communication modes: Bluetooth wireless link / USB link
	Mounting	Magnetized, Magnetized, wall mount, slot for suspension, Compatible with Multifix accessory
	Software Reference	DL Transfer: real time, data export, report generation P01654227

State at delivery

in a carrying bag with 3 x 1.5 V AA alkaline batteries, USB cable, verification certificate and quick start guide (complete manual and Data Logger Transfer software available from the Chauvin Arnoux website)

Accessories

Cone kit for rotating-vane flow-rate measurement (circular section Ø 210 mm and rectangular section 346 x 346 mm).....	P01654250
Ø 80 mm rotating vane sensor.....	P01654251
Shockproof sheath + Multifix.....	P01654252
Multifix.....	P011021002
Mains adapter.....	P01651023
Carrying bag.....	P01298075
Metal case.....	P01298071
Dataview software.....	P01102095
Bluetooth BLE / USB Modem for PC.....	P01654253
4 x AA/LR6 NiMH batteries + Charger.....	HX0053

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