

# MCV CAVA / Msb Sampler

High sequential flow sampler in compliance with NF M60-760, EN12341 and EN14907 standards

The CAVA Msb is a high sequential flow sampler which allows the sampling of fine particles in the air.

This equipment benefits from the latest technological innovations in the field of aerosol sampling to meet regulatory and normative requirements, in particular NF M60-760 (August 2017), for the sampling of aerosols in the environment for off-line measurement of radioactivity.

## OPERATING PRINCIPLES

The sampler allows sampling of particles suspended in the atmospheric air on paper filters.

The sampler is designed to take samples directly outdoors, 24 hours a day, 7 days a week, and has an automatic filter changer associated with a programming menu that can accept up to 15 paper filters.

Thanks to its low noise level, it can be used in the vicinity of homes and can also be installed in an air monitoring station for greater comfort.

Depending on the applications, different sampling heads are available as well as different filter diameters.



## FUNCTIONS

**Real-time display of the following parameters:** actual volume flow rate in  $\text{m}^3/\text{h}$ , standard volume flow rate in  $\text{Nm}^3/\text{h}$ , actual volume withdrawn in  $\text{m}^3$ , standard volume withdrawn in  $\text{m}^3$ , withdrawal time, measurement of atmospheric and air circuit pressure, withdrawal status, power level used by the pump motor (in %).

**Programming of the sampling parameters:** setting of the sampling flow rate from 15 to 60  $\text{m}^3/\text{h}$ , setting of the sampling duration, choice of the sampling duration: motor hours or real time clock, choice of the flow rate regulation mode: normalised or real, choice of the flow rate normalisation temperature: from 0 to 25°C.

**Programming of the sampling cycles:** choice of the number of filters loaded (from 1 to 15), choice of the starting filter, choice of the date and time for a delayed start, choice of a sampling and non sampling duration per filter = sequential sampling, function by time slot: each paper filter can be associated with a time slot of the day so as to be able to make comparisons by time slot over 1 to 14 days.

**Remote report of the good functioning: by relay contact (TOR):** closed contact indicates a good functioning, open contact indicates a bad functioning, by RS232: reception of all the states of the equipment on computer or by SMS.

**Safety:** differential circuit breaker, fuses on the power and regulation boards, opening of the box with a key, battery backup allowing navigation in the menu and recovery of the current filter, automatic restart of the sampling after a power cut and if the power cut is not longer than 24 hours, data saving even if the battery is discharged.

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## BENEFITS

- Automatic 15-filter changer  $\varnothing$  130 mm (versions 140 and 150 mm available, other  $\varnothing$  please contact us)
- Low noise level
- Measurement of actual flow ( $m^3/h$ ) or standard flow ( $Nm^3/h$ )
- Easily user-configurable operating cycle time from 1 to 168 hours, i.e. up to one week
- Adjustment of the sampling duration either on the hours of the integrated clock or on the hours actually performed by the equipment
- Stability of the sampling rate
- Remote reporting of correct operation (T.O.R., SMS, RS232)
- Storage and security of sampling data
- Data retrieval via integrated printer and/or USB key

## TECHNICAL SPECIFICATIONS

- **Flow rate range:** from 15 to 60  $m^3/h$
- **Maximum noise level:** 39.4 dB at 40  $m^3/h$
- **Resolution:** 0.5  $m^3/h$
- **Dimensions** (excluding sampling head): W x H x D = 1150 x 750 x 600 mm
- **Weight:** 62 kg
- **Max. power:** 1 100 Watts
- **Mains supply :** 230 Volts 50 Hz
- **Operating temperature :** -5 to +40°C
- **Backlit LCD screen**
- **Sampling intervals:** from 30 minutes to 96 hours
- **Communication via RS232, T.O.R., or SMS**
- **Delivered with 15 complete filter holders:** each filter is equipped with a perforated stainless steel grid, a teflon ring and a flat seal
- **Adjustable airflow:** from 15 to 60  $m^3/h$
- **Humidity:** 0-95% (non-condensing)
- **Housing:** made of fibreglass polyester
- **Protection:** by fuse and differential circuit breaker



## SAMPLING HEADS

The sampler can be equipped with different types of sampling heads depending on the diameter of the filter paper and its application; PM10 head: selection of 10  $\mu m$  particles, PM2.5 head: selection of 2.5  $\mu m$  particles, TSP head: sampling of all particles.

In compliance with the NF M60-760 (2017) standard, the sampling point is located at 1.5 m from the ground, the sampling head is equipped with a rain cap and an anti-insect screen, and a stainless steel sampling line with grounding. The entire unit can be dismantled for easy cleaning.

In order to avoid the fixation of particles by phenomena created by static electric charges between the sampling point and the collection place (paper filter), the sampling line is composed of grounded conductive materials and an anti-insect grid, and a stainless steel sampling line with grounding. The whole unit can be dismantled for easy cleaning.

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