

# Atmospheric Particulate Matter Sampler

## ECHO PM

**ECHO PM** is a "stand alone" instrument projected also for outdoor operation in harsh climatic conditions.

The wide regulation range and the accurate electronic flow sampling control at either actual or standard conditions, makes **ECHO PM** in accordance with the reference methods **EN 12341 for PM10 with head LVS PM10 2.3 m<sup>3</sup>/h,** and **US EPA 40 CFR part 50 for PM10 and PM2.5 at 1m<sup>3</sup>/h.\***

Developed and realized to allow the maximum utilizing flexibility, the **ECHO PM** satisfies the hardware and software requests that permits up to 2 sequential sampling lines\*\*.

Supplied with respective sampling head **ECHO PM** can be utilized respecting the "ISO/CD 16362 for the determination of polycyclic aromatic hydrocarbon PAHs" sampling norms.

*\*Possibility to monitor PM10, PM2.5, PM1, REALTIME trend concentrations and 24 sizes classes particle distribution and CO2 and relative humidity.*

*\*\*Facultative options.*

### Optional Accessory – Sequential Valve Module

The device can be equipped with an **8-way sequential system** for automatic programmable sampling, which allows you to:

- ⊙ Set customizable thresholds, timings, and flow rates;
- ⊙ Extend sampling duration over multiple days;
- ⊙ Automatically manage sampling sequences.

The **Sequential Valve Module**, installed on the top of the instrument, is compatible with preloaded filter **cassettes of 25 mm**, and optionally **37 mm** and **47 mm**.





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### MAIN FEATURES

- ⌚ In compliance with the following norms:  
EN12341, EN15549, ISO 16362, ISO 12884.
- ⌚ Autonomous sampling with maximum 2 sequential samples\*;
- ⌚ Electronically controlled flow rate sampling at standard and actual conditions;
- ⌚ Wide graphical display with background illumination, dedicated keyboard, RS232 interface;
- ⌚ Permanent date and hour programming;
- ⌚ Sampling time with 1" resolution is selectable from 1' to 168 h;
- ⌚ PM10, PM2.5, PM1, OPC real time dimensional classes 24 CO<sub>2</sub> and relative humidity real time;

### Measured and memorized parameters:

- > Flow rate;
  - > Totalized volumes;
  - > Ambient temperature;
  - > Ambient pressure;
  - > Filter load.
- Memorization of more than 60 sampling reports;  
Memorization of flow sampling of 5 minutes interval;  
Reduced dimensions and weight light alloy cabin, suitable for outside installation;  
Remote control via GSM SMS (\*);  
Sample conditioning in relation to wind speed and direction\*;  
2 Simultaneous sampling lines version is available for parallel sampling PM<sub>10</sub> and PM<sub>2.5</sub>.

### And MORE!

- ✔ Automatic reference flow control sampler for PM10 / PM2.5 according to reference method CEN EN 12341
- ✔ Automatic reference flow control sampler according to reference VDI 2267 and CEN EN 14902
- ✔ Automatic reference flow control sampler for Elemental Carbon / Organic Carbon (EC/OC) in PM10 according to VDI 2465 and CEN EN/TR 16243
- ✔ TSP measurement according to VDI 2463 parts 7 and 8 with sequential module up to 24 positions
- ✔ Sampling of PAHs, BaP, PCB, PCP / lindane, PCDD and PCDF, dioxines and furans by means of a PU cartridge with pre-filter (TSP) according to EN15549
- ✔ Sampling of bioaerosols according to the relating standards
- ✔ Asbesto sampling
- ✔ Touch screen/button user interface
- ✔ Internal memory for data archive
- ✔ USB, WIFI (with TCR TECORA app) ethernet connection for data download and control (via TCR TECORA web server)
- ✔ Anodized aluminium housing for outdoor use
- ✔ Optical particle counter for instantaneous PM10, PM2.5, PM1 analysis with 24 dimensional classes analysis (Optional)
- ✔ Wind speed wind direction sensor with possibility to program sampling start as a function of WD/WS (Optional)
- ✔ MODEM for remote data download and control

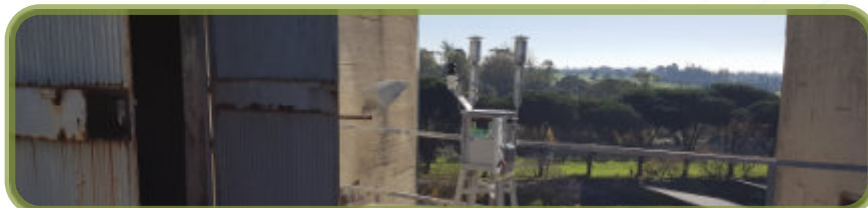
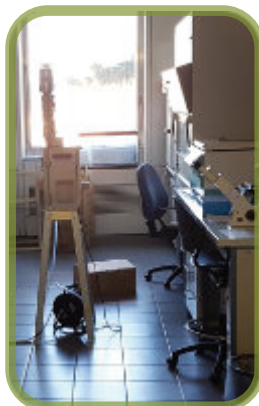


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## PM TECHNICAL FEATURES and CODES

Flow Range	10 - 50 l/min
Flow Rate at Inlet	> 50 l/min
Pump Type	4.2 m <sup>3</sup> /h dry rotary vane (2 pumps for simultaneous version)
Autonomy	max 3 sequential samples*
Power Supply	220/240 Volt 50Hz
Operative conditions (Low Temp. Kit)	-3°+40°C (-20°C+40°C with low temp kit) AA99-009-9901SP
Dimensions mm	340 x 250 x 440 mm (b x p x h) Without Stand 340 x 450 x 400 (simultaneous version)
Weight Kg	19 Kg
ECHO <b>PM</b> 1 Sampling Line, Pwr Supply 230Vac	AA99-009-0015SP
ECHO <b>PM</b> 2 Sampling Contemporary Lines, Pwr Supply 230Vac	AA99-009-0017SP
ECHO <b>PM</b> 3 Sampling Contemporary Lines, Pwr Supply 230Vac	AA99-009-0018SP
P/N of aluminium stand	AA99-009-9910SP
P/N Ultrasonic Wind Speed Direction Sensor	AA99-009-9921SP
P/N 2 sampling simultaneous lines	AA99-009-0025SP

## APPLICATIONS



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