



# Atmospheric Particulate Matter Sampler

## ECHO PM

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

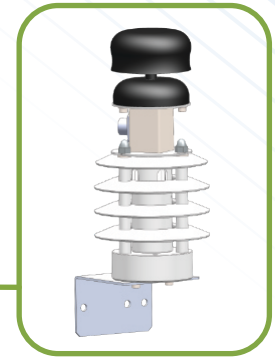
The wide regulation range and the accurate electronic flow sampling control at either actual or standard conditions, makes **ECHO PM** in accordance with the reference methods **EN 12341:2014 for PM10 with head LVS PM10 2.3 m<sup>3</sup>/h, and US EPA 40 CFR part 50 for PM10 and PM2.5 at 1m<sup>3</sup>/h.\***

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.*

*\*\*Optional features.*





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## MAIN FEATURES

- Ⓞ In compliance with the following norms:  
EN 12341, EN 15549, ISO 16362, ISO 12884.
- Ⓞ Autonomous sampling with maximum 2 sequential samples\*;
- Ⓞ Electronically controlled flow rate sampling at standard and actual conditions;
- Ⓞ Wide 5" touch screen display with background illumination, dedicated keyboard;
- Ⓞ Permanent date and hour programming;
- Ⓞ Sampling time with 1" resolution is selectable from 1-99999 min.;
- Ⓞ 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 + Log files for each report;

Flow could be logged within log time from 1-900 sec.;

Reduced dimensions and weight light alloy cabin, suitable for outside installation;

Remote control via modem (\*);

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 flow control with venturi tube in compliance with EN 5167
- ✔ 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 (Optional) 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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## 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 PM 1 Sampling Line, Pwr Supply 230Vac	AA99-009-0015SP
ECHO PM 2 Sampling Contemporary Lines, Pwr Supply 230Vac	AA99-009-0017SP
ECHO PM 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

