

# DUAL CHANNEL SAMPLER OF SUSPENDED PARTICULATE MATTER

*HYDRA Dual Sampler*



## MAIN FEATURES

1. The instrument can work with any sampling inlet (for example PM<sub>10</sub>, PM<sub>2.5</sub>, PM<sub>1</sub>) within the flow rate range 0.8 + 2.5 m<sup>3</sup>/h, on two distinct independent channels
2. Temperature control of the air flow through one or both the sampling lines, in order to minimize the volatile material losses (optional feature)
3. Cooling system for the sampled filters Unloader to assure samples stability (optional feature)
4. Sampling on  $\varnothing$  47mm filter membranes, exploitable for further analysis
5. Completely automatic management of the sampling quality controls
6. On line monitoring of all parameters characterizing the sampling process, with diagnostic warnings of possible anomalies.
7. Sampling data storage on internal buffer
8. Local control with RS232 serial interface
9. Complete remote instrumental control via Modem/GSM. Automatic SMS generation for diagnostic warnings

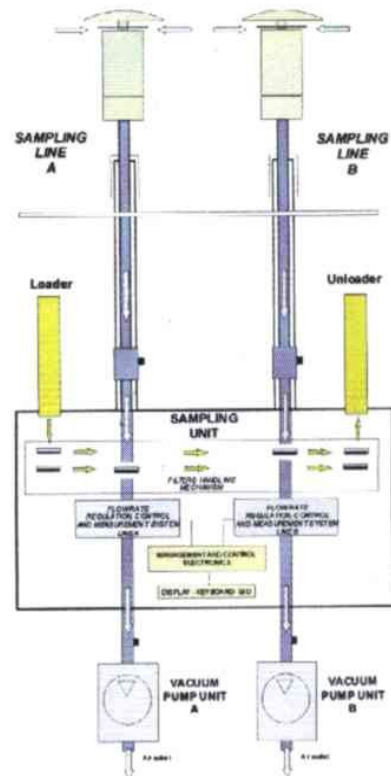
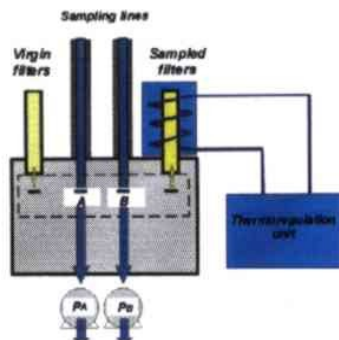


*Dual channel  
reference sampler*

*with  
PM<sub>10</sub> sampling inlet at  
2.3 m<sup>3</sup>/h  
in compliance with  
EN 1234.1*

## APPLICATIONS

- Simultaneous sampling on two independent sampling lines. Possibility of sampling different granulometric fractions (for example PM<sub>10</sub> and PM<sub>2.5</sub>)
- Sampling with a single sampling inlet. In this application the sample can be divided on two distinct filter membranes, suitable for different chemo-physical analysis
- Support for metrological studies in the PM<sub>x</sub> sampling field



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**DUAL CHANNEL SAMPLER  
OF SUSPENDED PARTICULATE MATTER  
HYDRA Dual Sampler**



**TECHNICAL SPECIFICATIONS**

Operating flow rate	Programmable in the range 0.8 – 2.5 m <sup>3</sup> /h
Flow rate measurement reproducibility	1% of the measured value
Flow rate measurement relative uncertainty	2% of the measured value
Flow rate control	Automatic with regulation valve moved by a step motor, with relative precision < 1% of the requested nominal value
Max allowed pressure drop	40 kPa at 2.3 m <sup>3</sup> /h
Filters Loader/Unloader capacity	No. 36 filter cartridges (or 72 on demand)
Filter cartridges	Standard supply: for Ø 47 mm filter membranes
I/O devices	RS232 interface for PC connection (equipped with 2 DB9 male connectors usable in reciprocal exclusion) RS232 interface for GSM/PSTN Modem connection (equipped with 1 DB9 female connector)
Storage capacity	Buffer data with 750 records (battery backed-up) Trace files buffer (till 1500 storable events)
Service compressed air	Operating pressure 200 ÷ 300 kPa (supplied by an auxiliary air compressor supplied with the instrument)
Power supply	230 V (± 10%) 50 Hz single-phase
Absorbed electric power	900 W (max)
Floating batteries	2 12 V rechargeable floating batteries
Air compressor unit	12 l/min at 300 kPa
Operating conditions inside the cabinet	Temperature between + 5 and + 35 °C (within this cabinet internal temperature range, specified precision and accuracy values are guaranteed) Relative Humidity lower than 85% (with no condensation)
Storage conditions	Temperature between - 10 and + 55 °C
Sizes(W x D x H) Sampling unit Vacuum pump unit (A or B) Service air unit	430 x 540 x 240 mm 350 x 550 x 200 mm 180 x 420 x 240 mm
Weights Sampling unit Vacuum pump unit (A or B) Service air unit	42 kg 10 kg 18 kg
Sampling inlets manufactured by FAI Instruments (on customer demand)	<ul style="list-style-type: none"> <li>- PM10 sampling inlet (LVS-PM10 model, in compliance with EN 1234-1 standard, working at 2.3 m<sup>3</sup>/h)</li> <li>- PM10 sampling inlet LVS-PM10 with 1 m<sup>3</sup>/h nominal flow rate (equivalent to the LVS-PM10 EN 1234-1 model)</li> <li>- PM2.5 sampling inlet (LVS-PM2.5 model, nominal flow rate 2.3 m<sup>3</sup>/h)</li> <li>- PM2.5 sampling inlet (LVS-PM2.5 model, nominal flow rate 1 m<sup>3</sup>/h)</li> <li>- PM1 sampling inlet (LVS-PM1 model, nominal flow rate 2.3 m<sup>3</sup>/h)</li> </ul>
  <b>CONFORMITY DECLARATION</b>	<b>European Directives and following amendments</b> Directive 73/23/EC about low-voltage electric material Directive 98/37/EC about machinery safety Directive 89/336/EC about Electromagnetic Compatibility <b>Technical harmonized regulations:</b> EN 61010-1 – Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use EN 61326-1 – Electromagnetic Compatibility (EMC) requirements - Emission and Immunity EN 61000-3-2 – Harmonics EN 61000-3-3 - Flicker
Dualchannel OPC Monitor [OPTIONAL UNIT]	Predisposition (hardware and software) for integration of an "on line" OPC (Optical Particle Counter) dual channel system for the measurement, in real time and in continuous, of particles concentration in two granulometric intervals representative of mass distribution in "fine" and "coarse" fractions.

