SAMPLING MEGA SYSTEM CALIBRATION & METROLOGY

APIS PLUS



- Isokinetic sampler
- Compliant with
 UNI EN ISO 16911-1
 UNI EN 13284-1
 UNI EN 15259
 ISO 9096 and
 EPA METHOD 1, 2, 4, 5
- Multiples additional features
- New more practical and functional design
- Light weight



Apis Plus represents the most advanced version of automatic isokinetic samplers available on the market: it measures speed, flow rate and isokinetic sampling in compliance with technical regulations.

The reinforced metal frame is made of shockproof material and it has two sturdy handles that provide a solid grip for handling and transport.

It is available with a 4 m³/h dual head diaphragm pump or alternatively, with a 6 m³/h rotary vane. The suction line inlet comes with a dust filter, which is easily replaceable from the upper panel, and a condensation collection system.

The elevated **hydraulic pump head** and the electronic management and control system automatically compensate for **pump load-loss** variations due to filter clogging, and maintain constant flow rate or isokinetic flow throughout the sampling period.

The large **touch-screen graphics display** (10 inches) allows for easily viewing and managing large quantities of information and data.

It is equipped with an input plug for detecting duct temperature using "K" thermocouples and independent sensors for detecting differential, static and barometric pressure. The instrument is compatible with all types of pitot and K thermocouples available on the market.

Measurement and sampling data are automatically stored and can be both viewed and transferred to a US Pen Drive via the port on the main panel.

The internal 32-GB Compact Flash guarantees ample storage space

OPTIONS _____

- One feature that makes it unique, is its ability to acquire Mega System analyzer parameters (E1 series), which are equipped with an oxygen sensor (PARAMAGNETIC) and a carbon dioxide sensor (NDIR). In compliance with current laws, this allows calculation of effluent gas density, recording values during sampling with real-time adjustment of the isokinetic flow
- 4-20mA / 1-10V signal board

Enables capturing and recording data from analyzers of other manufacturers into the sampling report, and utilizes certain acquired parameters for real-time isokinetic flow calculation

The X1-PROBE series provides thermoregulation, with data recorded in the sampling report

The parameters can be certified, on request, by EN 17025 accreditated laboratories

- Integrated printer
- Possibility to acquire data from the E1-Analyzer



CARATTERISTICHE TECNICHE

- Independent pressure sensors allow for compliance with the requirements of Table 3 (Performance requirements), Table 4 (Performance requirements during field measurements) and Table A.1 (Performance requirements for differential pressure-based flow measurement) of EN ISO 16911-1
- With the independent static pressure sensor separate from the barometric pressure sensor, it is possible to calculate absolute pressure as indicated in formula A.12 of the regulation (A.3.3 Absolute pressure of gas), and multiple instantaneous acquisitions can be made at the measurement point to enhance the quality of results.
- A high precision electronic system regulates sampling flow and allows for accurate and regularly modulated isokineticism, in compliance with industry standard provisions, even in cases of sudden speed variations. Sampling flow variations that could cause anomalous stresses on the

filter, or in the solutions present in the line, are thereby avoided.

The pneumatic circuit uses a vacuum-tight pump and a volumetric meter: with the circuit working slightly

overpressure with respect to ambient pressure, there are no pneumatic elements for flow control (e.g. valves,

flow meters, mass flow, etc.) and by positioning the dry-gas meter at the end of the circuit, keeping maintenance to a minimum

- A meter with uncertainty of less than 2% is used to measure dry-gas volume flow, and it is provided with a temperature measurement sensor with an uncertainty of less than 1%.
- The system is equipped with a buffer battery, allowing instrument shutdown without data loss in case of power failure





CARATTERISTICHE SOFTWARE

- Customer registry file
- Registered data archive ducts/chimneys
- Database of measurement tubes
 - Measurement and sampling configuration file (sinking)
- Menu for INSPECTION, ISOCHETIC SAMPLING, and UTILITIES for the calculation of density and condensation
- Constant flow sampling with acquisition of thermodynamic parameters
- Management of isokinetic sampling and sampling with derivative line
- Measurement Integration and parameter recording at programmable intervals from 10 to 300 seconds
- Data logger function
- MEMORY MANAGEMENT data export in TXT and CSV format
- Sample ID registration
- Sensor calibration using integrated software



SPECIFICHE TECNICHE _

4 m ³ PUMP	6 m ³ PUMP						
PERFORMANCE							
Membrane pump - double headed 4 m³/h	Rotary pump 6 m ³ /h						
> 600 mmHg							
2 ÷ 50 L/min	5 ÷ 70 L/min						
0,01 L/min							
0,014 L	0,072 L						
1,5%							
G2,5	G4						
0,1 L							
0,014 L	0,072 L						
2%							
INTERFACE, DATA ARCHIVING							
Touch screen (10")							
RS232 RS485 (device communication) USB (su Pen Drive)							
32 Gb							
ENVIRONMENTAL CONDITIONS							
0 °C ÷ 45 °C - 95% UR							
	4 m ³ PUMP Membrane pump - double headed 4 m ³ /h > 600 2 ÷ 50 L/min 0,014 L 1,5 G2,5 0, 0,014 L 2 CHIVING CHIVING SRS485 (device of USB (su F 32 NDITIONS 0 °C ÷ 45 °C						

ENERGY						
Power	110-230 Vac – 50 Hz	230 Vac – 50 Hz				
Consumption	200 W 300 W					
• FEATURES						
Peso	18 Kg	21 Kg				
OPTIONS						
LAT Certificate for volumetric meter						
Signal board 4-20mA / 1-10V						
SUPPLIED WITH						
Remote temperature control of the X1 Probe						
Possibility to connect to an external PC						
Automatic density measurement via E1-Analyzer						
Intergrated printer						
Technical Manual						
Test report						

TEMPERATURE SENSORS						
	Range	Resolution	Accuracy	Linearity		
Meter	0 ÷ 50 °C	0,1 °C	± 1%	±1°C		
Type K Thermocouple	0 ÷ 1100 °C	0,1 °C	± 1%	±1°C		
PRESSURE SENSORS						
	Range	Resolution	Accuracy			
Differential	0 ÷ 100 mmH2O (0 ÷ 1000 Pa)	0,01 mmH2O (0,1 Pa)	± 1% O.R.			
Static	1000 ÷ 1000 mmH ₂ O (-10.000 ÷ 10.000 Pa)	0,1 Pa	± 1% O.R.			
Barometric	600 ÷ 1100 mbar	0,1 mBar	± 2 mBar			



