

VOPV-10

Digital High-Volume Air Sampler



The VOPV-10 high-volume air sampler is intended for air sampling of very high volumes allowing for follow-up contamination measurement. It is typically utilised for the sampling and evaluation of radioactive aerosols, particulates, etc. in the contaminated air.

Purpose

The VOPV-10 Digital High-volume Air Sampler is intended for air sampling on filter media with adjustable flow rate. It is used for the sampling and consequent evaluation of radioactive aerosols, particulates, and other compounds in the contaminated air.

The radioactive pollutants retained on the filter can be subsequently analysed in a laboratory and the nuclide specific volume activities can be calculated.

Considering its high performance, low maintenance demands and simple operation, the VOPV-10 air sampler can be utilised as follows:

- sampling unit for the operative activity measurements of aerosols and iodines in working and outdoor environment air
- sampling unit for continuous activity measurements (and reporting) of aerosols and iodines in air taken from ventilation stacks
- sampling unit in outdoor environmental monitoring stations
- sampling unit for low-energy applications

Description

Depending on the purpose, an appropriate filter (material), filter holder (size), and VOPV-10 model (flow rate) can be determined. By means of motor speed regulation, the sophisticated airflow control system provides a sustained pre-set air flow, regardless of filter fouling. The air sampler can operate in any chosen mode: occasionally / periodically / continuously.

Several standard models are available varying by flow rate for particular applications: The models with a flow rate up to 30 m³/h (17.67 cfm) are intended for aerosol sampling (using standard FPM cloth filters), and the models with a flow rate from 1.5 to 5 m³/h (0.88 to 2.94 cfm) are intended for iodine (and aerosol) sampling. Optionally, the VOPV-10 air sampler can be supplied with a customized air flow rate range and customized filter holder. The maximum flow rate could be limited by type and dimension of assigned filter.

Main Advantages

- Powerful vacuum pump with efficient high-speed brushless motor, allowing very high volumes of air to be sampled in very short time; with a long lifespan, higher reliability, lower maintenance costs
- Possibility of continuous operation and both indoor and outdoor use
- Programmable sampling intervals
- Regulation of the motor power according to the pressure difference on the filter, permitting the flow rate to be constant despite of rising of filter pollution
- Easy control
- Optional data display and unit control remotely from a host system



*Universal filter holder, model K0547-54
(see the FPM cloth pre-filter,
the iodine cartridge is inside)*

Description

A powerful centrifugal pump provided with an efficient high-speed brushless motor, which is controlled by a micro-processor, is the primary component of the VOPV-10. A flow-meter, control unit, keyboard, and back-lit graphic display are also included.

Standardly, the suction and exhaust sections are connected to hoses of an internal diameter Ø32 mm (1¼ in) by quick-acting couples.

The current airflow, total sampled volume from system start, sampled volume in selectable time interval, total number of operational hours from start, pressure and temperature of a sampled medium, status and error messages, and the real time can all be clearly seen on the display.

VOPV-10 usually works in an autonomous mode (the airflow is controlled by a built-in control unit), or, optionally, it can be connected to a host system and controlled by an external PC via RS-485 (optionally RS-232) interface. VOPV-10 can work in automatic mode for periodic sampling at pre-defined time intervals.

The system is equipped with many sophisticated functions. The control unit provides, amongst others, simple adjustment of the desired airflow, automatically holding the desired airflow, motor overload protection, automatic restart after power supply failure recovery, etc.

The sampler is produced for portable installations. Optionally, it is supplied with straps and strap fixtures for easy transport.

Models and Accessories

Model	Description
K0547-20	VOPV-10, flow rate 0.1 to 0.3 m ³ /h (0.06 ~ 0.18 cfm)
K0547-10	VOPV-10, flow rate 1 to 3 m ³ /h (0.59 ~ 1.77 cfm)
K0547-05	VOPV-10, flow rate 2 to 6 m ³ /h (1.18 ~ 3.53 cfm)
K0547-04	VOPV-10, flow rate 4 to 12 m ³ /h (2.35 ~ 7.06 cfm) (for iodines and/or aerosols sampling)
K0547-03	VOPV-10, flow rate 6 to 15 m ³ /h (3.53 ~ 8.83 cfm) *
K0547-30	VOPV-10, flow rate 12 to 30 m ³ /h (7.06 ~ 17.67 cfm) * (for aerosols sampling)

Optional Accessories

K0547-50	Adaptor for power input 230 VAC, 300 VA (integrated)
K0547-5x	Filter holder, for filter Ø 100 / Ø 120 / Ø 140 mm, (4 / 4¾ / 5½ in); for aerosols, environment sampling
	Dual filter holder, for aerosols & iodines, duct sampling (K0547-52) / environment sampling (K0547-54)

- Customized filter holders
- Hoses for sampled medium connection
- Handle, straps, and strap fixtures for easy transport
- Outdoor shelter and accessories
- Software for remote display and control



Flexible solutions

* The limits are valid for autonomously installed samplers with FPM 1515 filters. With other filters or samplers installed in ventilation systems they may change.

Consumable Spare Parts

K0022-05 K0022-06	FPM Cloth Filter (FPM 1515, FPM 1530) - polymer cloth filters
K0022-10	Glass Fibre Filter (alternative to FPM)
K1346-01	Carbon Cartridge (for iodines) diam. 57 x 25.4 mm (2¼ x 1 in)
Alternative Products	
K0215	VOPV-12 Digital High-volume Air Sampler

Specification

Available negative pressure	10 kPa
airflow of 20 m ³ /h (11.77 cfm)	(75 mmHg)
Standard medium junction	quick-acting couples hose Ø 32 mm (1¼ in)
Control display	graphic display 128 x 64 dots
Connectivity to host PC (option)	RS-485 (Canon 9 pin)
Dimensions (L x H x W) (without filter holder)	310 x 195 x 170 mm (12¼ x 7⅝ x 6¾ in)
Weight	4.2 kg (9¼ lb)
Power	24 VDC, max. 10 A
Medium temperature	-10 ~ +40 °C (+14 ~ 104 °F)
Ambient temperature	+5 ~ 40 °C (41 ~ 104 °F)



VOPV-10 with integrated adaptor for power input 230 VAC

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