

F&J SPECIALTY PRODUCTS, INC.

THE NUCLEUS OF QUALITY AIR MONITORING PROGRAMS

GLOBAL AIR SAMPLING SYSTEM

F&J MODEL: GAS-PM2.5D

NOTABLE FEATURES:

- Size Selective Inlet (<2.5 micron cut size)
- Precision machined DP flow sensor
- State-of-the-Art electronics
- Vacuum fluorescent display; 4×24 characters
- Flow rate and Volume measurements corrected to operator selectable Reference Temperature and Pressure
- Automatic flow control
- Display in English or various metric units
- Dual RS-232 communication ports
- Flow rate accuracy: ±3.0% Full Scale
- Auto zero calibration feature of flow sensor
- Various operator selectable sampling modes
- Display of Multiple on-board calculations
- Wide temperature range electronics



GENERAL DESCRIPTION:

The GAS-PM2.5D Series Air Sampling Systems are designed for remote unattended continuous air sampling applications. The GAS-PM2.5D Series Air Samplers feature a brushless motor with electronic motor speed control that maintains a user selectable flow rate. The flow rate range attainable through the filter media is dependent upon the air porosity of the filter media. The GAS-PM2.5D Series design accommodates rapid field service and component replacement.

For durability and weather resistance, the system is housed in a freestanding powder coat painted aluminum enclosure. The sample air is drawn in under the eaves of the hinged lid from all four sides and is exhausted near the bottom of the enclosure. The locking swing door on the enclosure provides convenient access for servicing the equipment inside.

The electronic flow control measurement sub-system of the GAS-PM2.5D Series provides an operator selectable standard flow measurement and a constant flow of air through the filter medium. The air velocity is measured by a precision-machined DP sensor. The controller can be readily set to any sampling flow rate of ~100 CFM (~170 m³/hr) depending on the filter paper air resistance and dimensions. The bright VFD readout displays multiple air sampling information including current flow rate, average flow rate, current temperature and totalized volume. The filter holder can be custom designed to accommodate any filter size and type. The GAS-PM2.5D model utilizes an 8"×10" (20.3×25.4 cm) filter. Optional software is available to download air-sampling data via an RS-232 port. The software provides a monitoring report, file creation and setup via a laptop computer.

GAS-PM2.5D

Performance:

Basic components of the system are modular and independently serviceable. Sample flow rate can be set ~100 CFM (~170 m³/hr). Filter holder is a 8"×10" (20.3×25.4 cm) standard.

Technology: Microprocessor controlled state of the art electronics

Operating Temperature Range: -20°F to 122°F (-29°C to 50°C)

Typical Flow Rate Range: ~100 CFM (~170 m³/hr)
(Depending on filter paper dimensions and air resistance).

Motor: Brushless: 1100 Watt motor with electronic motor speed control

Power: 110-120VAC; 50/60Hz; 30 amperes; single phase.

Housing: Powder coat painted aluminum Hinged cover
Removable hinged cover Locking swing door with key

Dimensions: 57.5"H × 21.5"W × 21.5"D (146H × 54.6W × 54.6 cm D)

Weight: Approximately 139 lbs. (63 kg)

Shipping Weight: Approximately 190 lbs. (86.4 kg)

Installation Category: Pollution Degree 3 **Enclosure Rating:** **IPX3**

Automatic Flow Control:

The system microprocessor monitors flow rate relative to the operator selectable preset reference T and P corrected flow rate established during the setup procedure and electronically adjusts the electronic motor speed adjustment, if necessary, to maintain the flow within ± 3.0% of setting. The microprocessor computes the Reference flow rate by correcting the measured values of temperature and pressure.

On-Board Measurement, Calculations and Other System Features

Measurements:

- Temperature of air flow through system
- Inlet pressure to the flow sensor
- Differential Pressure of the flow sensor
- Ambient pressure

Calculations/Determinations:

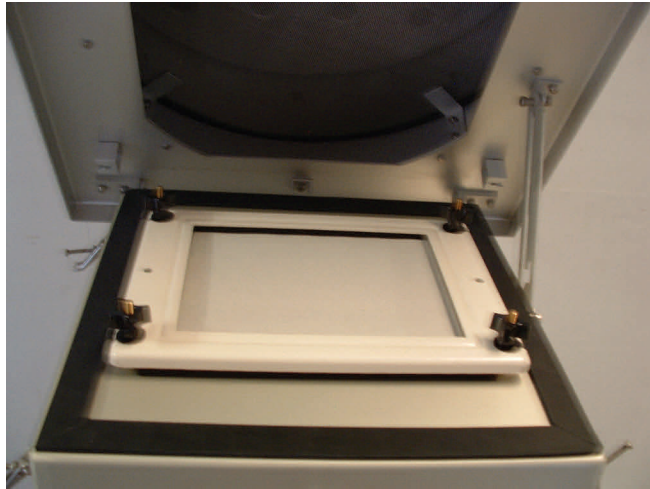
- Totalized volume, STP
- Current flow rate, STP
- Minimum and maximum temperature
- Minimum and maximum inlet pressure
- Elapsed time
- Selectable ambient flow rate and various operator selectable STP options

Optional Items:

- Optional data communications software to download data from instrument to PC after completion of sampling activity

Other System Features:

- Display of data in English or metric units by selection
- Automatic shut off of system on totalized volume or elapsed time
- Real time clock with battery backup
- Dual password protection
Operator password
System Administrator password
- Dual RS-232 communication ports
- Periodic sampling scenario based on periods within a week selectable by the user
- Utilization of 8"×10" (20.3×25.4 cm) filters
- Vacuum Fluorescent Display; 4×24 characters
- Multi-lingual text options
- Mass or volumetric flow
- Operator selectable gas



View of filter holder mechanism

**Close up frontal view of
GAS-PM2.5D Series System
enclosure interior**



**Close up of Global Air Sampler
Electronic Module**





**GAS-PM2.5D Series System
Normal Operating Scenario**



**GAS-PM2.5D Series System
Enclosure Door Open**



**View of PM2.5 Size Selective
Inlet illustrating interior features**



**GAS-PM2.5D Series System
PM2.5 Inlet Open Position for Access to
Filter Paper**