

## GLOBAL AIR SAMPLER SYSTEM F&J MODEL GAS-PM2.5DT

### 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
- Standard flow rate accuracy: ±3.0% Full Scale
- Custom flow calibration to 1% of reading
- 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-PM2.5DT Series Air Sampling Systems are designed for remote unattended continuous air sampling applications. The GAS-PM2.5DT 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-PM2.5DT 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-PM2.5DT 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 within the calibrated flow range 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-PM2.5DT 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 set-up via a laptop computer.

# GAS-PM2.5DT Air Sampler Specifications

## Performance:

Basic components of the system are modular and independently serviceable. Sample flow rate can be set to any value within the calibrated flow range. Filter holder is a 8"×10" (20.3×25.4 cm) standard.

**Technology:** Microprocessor controlled state of the art electronics

**Operating Temperature Range:** 0°F to 122°F (-17°C to 50°C)

**Typical Flow Rate Range:** 34 to 170 m<sup>3</sup>/hr (20 – 100 CFM)  
(Depending on filter paper dimensions and air resistance).

**Motor:** Brushless: 1.5 H.P. (1100 Watt) motor with electronic motor speed control

**Power:** 100-120VAC; 50/60Hz; 12 amperes; single phase.

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

**Dimensions:** 74.2"H × 28.5"W × 28.5"D      (188.4H × 72.3W × 72.3 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 with the standard calibration, or to 1% reading with the optional custom calibration. 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

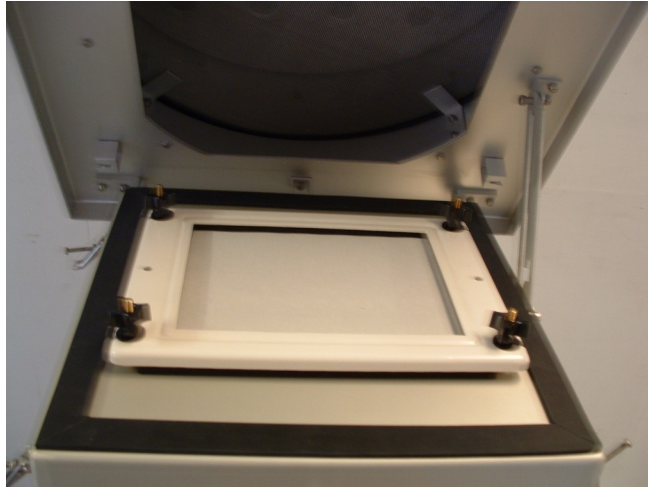
### Optional Items:

- Optional data communications software to download data from instrument to PC after completion of sampling activity
- Optional custom flow calibration to 1% of reading

### 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

# GAS-PM2.5DT Air Sampler Specifications



**View of filter holder mechanism**

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



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





# GAS-PM2.5DT Air Sampler Specifications



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



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



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



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