



F&J SPECIALTY PRODUCTS, INC.

The Nucleus of Quality Air Monitoring Programs

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GLOBAL MEGA HIGH VOLUME AIR SAMPLING SYSTEM F&J MODEL GAS-60810-MHVE-HSI

NOTABLE FEATURES:

- Precision machined DP flow sensor
- Omni-directional hemispherical sample inlet
- Vacuum fluorescent display; 4 lines×24 characters
- Flow rate and Volume measurements corrected to operator selectable Reference Temperature and Pressure
- Automatic flow control
- Operator selectable units of measurement
- USB and RS-232 Communication Port w/Operator selectable download frequency for real-time data collection or transmission
- Flow rate accuracy: $\pm 3.0\%$ Full Scale
- Auto zero calibration feature of flow sensor
- Continuous or periodic sampling mode
- Multiple operator selectable data storage rates
- Display of Multiple on-board calculations
- Powerful 1800 Watt vacuum blower
- 220-240VAC; 50/60Hz, single phase



GENERAL DESCRIPTION:

The GAS-60810-MHVE-HSI Series Air Sampling Systems are designed for remote unattended continuous air sampling applications. The GAS-60810-MHVE-HSI 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. Flow rates as high as 170 CFM (289 m³/hr) are attainable with certain glass fiber filter media. The GAS-60810-MHVE-HSI Series design accommodates rapid field service and component replacement. The omni-directional Glass Reinforced Plastic (GRP) hemispherical sample inlet design provides improved sample collection efficiency.

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 360° omni-directional hemispherical sample inlet and is exhausted near the bottom of the enclosure. The locking swing door on the enclosure provides convenient access for servicing the equipment inside. A lockable latch on the hemispherical sample inlet restricts unauthorized tampering with the filter holder.

The electronic flow control measurement sub-system of the GAS-60810-MHVE-HSI Series provides an operator selectable reference standard corrected flow measurement and a constant flow of air through the filter medium. The flow rate is measured by a precision-machined DP sensor. The controller can be readily set to any sampling flow rate between 50 and 170 CFM (85-289 m³/hr). The flow rate obtainable depends on the filter paper air flow 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 many large filter size and type. The GAS-60810-MHVE-HSI standard model utilizes an 8"×10" (20,3×25,4 cm) filter. Software is available to download air-sampling data via an RS-232 or USB port. The software provides a monitoring report, file creation and setup via a laptop computer.

GAS-60810-MHVE-HSI (220 – 240VAC)

Performance:

Basic components of the system are modular and independently serviceable. Sample flow rate can be set between 50 and 170 CFM (85 and 289 m³/hr). The standard filter holder has the dimensions 8”×10” (20,3×25,4 cm). The filter media is located below an omni-directional sample inlet.

Technology: Microprocessor controlled state of the art electronics
Operating Temperature Range: 0°F to 122°F (-18°C to 50°C)
Storage Temperature Range: -31°F to 156°F (-35°C to 70°C)
Typical Flow Rate Range: 50 – 170 CFM (85 to 289 m³/hr)
(Depending on filter paper dimensions and filter media air resistance)

Motor: Brushless: 2.4 H.P. (1800 Watts) motor with electronic motor speed control

Power: 220-240VAC; 50/60Hz; 20 amperes; single phase. (1900 Watts)

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

Sample Inlet: Omni-directional Glass Reinforced Plastic (GRP)

Dimensions: 67”H × 26”W × 26”D ~ (170,2H × 66,1W × 66,1 cm D)

Weight: Approximately 130 lbs. (59 kg)

Shipping Weight: Approximately 300 lbs. (136 kg)
To be shipped on 2 pallets – Pallet 1: 180 lbs. (81.8 kg)
Pallet 2: 120 lbs. (54.4 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 to the reference values.

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, Reference T and P*
- Current flow rate, Reference T and P*
- Minimum and maximum temperature
- Minimum and maximum inlet pressure
- Elapsed time
- Ambient flow rate and volume
- * Operator selectable REF T and P

Data Acquisition Software:

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

Other System Features:

- Omni-Directional sample inlet
- 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
- Various data storage options
- 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) rectangular filters
- Vacuum Fluorescent Display; 4lines ×24 characters

Options:

- Weather Station
- Gasdaq Data Acquisition Software
- Integration of another air sampler
- Telecommunication option
- Heating element to prevent icing on filter paper.



Typical Maximum Flow Rates for GAS-60810-MHVE-HSI Series

Filter Paper (8" X 10")	Maximum Flow Rate (LPM)		Maximum Flow Rate (CFM)		Maximum Flow Rate (m ³ /hr)	
	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
FP810	3099	2851	110	91.6	186	154.9
FP810M	4443	3701	157	130.7	267	222.4
GC508X10IN	2929	24.39	97	80.8	164	136.6
5211810	3540	2948	125	104.1	212	176.5
GC908X10	3240	2698	114	94.9	194	161.6
PG60	3297	2746	116	96.6	198	164.9
FP810M2	4817	4012	170	141.6	289	240.7
EPM2000	3212	2675	114	94.9	193	160.7
GA558X10IN	3901	3249	102	84.9	174	144.9
2064810	4437	3696	157	130.7	266	221.5



Additional Operator Selectable Features Provided by The Global Air Sampling System Product Line

Language Options:	English
Sampling Mode:	Volumetric Flow or Mass Flow
Gas Type:	Air, O ₂ , N ₂ , H ₂ , CO, CO ₂ , C ₃ H ₆ , He, NH ₃
Engineering Units	
Volumetric Flow:	sccm, SLPM, SCFM, sm ³ /min, sm ³ /hr
Mass Flow:	kg/hr, g/min, lbs/hr
Temperature:	°C, °F
Pressure:	In. Hg, mm Hg, bar, mbar, atm, kPa, hPa
Reference T and P	
Reference T:	0°C, 15°C, 20°C, 21.1°C (70°F), 25°C
Reference P:	101.325 kPa (760 mm Hg), 100 kPa (1bar)
RS232 Data Output Frequency:	1 sec, 1 min, 10 min, 20 min, 30 min, 1 hr
Data Storage Frequency:	1 min, 10 min, 20 min, 30 min, 1 hr
Operating Mode:	Continuous, Periodic
Periodic Sampling Options:	1 hr. (12 five minute periods), or weekly (24 one hour periods for 7 days)
Ending Mode:	By time, By volume
Operator Selectable Passwords:	2 levels
Date and Time Setup	Input of real time and date
Alarm Settings	Flow, Inlet pressure, temperature, inlet pressure drop

Close Up Photos of Control Box

