



F&J SPECIALTY PRODUCTS, INC.

The Nucleus of Quality Air Monitoring Programs

MEGA HIGH VOLUME AIR SAMPLER SYSTEM F&J MODEL DF-60810-MHVE-HSI

NOTABLE FEATURES:

- Display in English or metric units set at factory
- Omni-directional hemispherical sample inlet
- Choices of flow/volume units:
 - SLPM SL
 - SCMH SCM
 - SCFM SCF
- State of the Art microprocessor electronics
- Automatic Flow Control
- Auto Shut-off on time or volume
- Flowrate and volume totalizations displayed are corrected to a factory settable Reference Temperature and Pressure (4 options available)
- Elapsed time meter
- Auto zero calibration feature of flow sensor
- Bright LED display
- Flow rate accuracy within $\pm 4.0\%$ F.S.
- RS-232 Communication Port
- 220 – 240 VAC, 50/60Hz; single phase



GENERAL DESCRIPTION:

The DF-60810-MHVE-HSI Series Air Sampling Systems are designed for remote unattended continuous air sampling applications. The DF-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 attainable through the filter media is dependent upon the air porosity of the filter media. Flow rate as high as 170 CFM (289 m³/hr) are attainable with certain glass fiber filter media. The omni-directional Glass Reinforced Plastic (GRP) hemispherical sample inlet design provides improved sample collection efficiency.

The DF-60810-MHVE-HSI Series design accommodates rapid field service and component replacement. The basic components of the system are assembled in a modular fashion so that each component can be readily and independently removed for service.

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 DF-60810-MHVE-HSI Series provides a reference standard flow measurement and an operator selectable constant flow of air through the filter medium. The air flow is measured by a precision-machined differential pressure sensor. The controller can be readily set to any sampling flow rate between 50 and 170 CFM (84-289 m³/hr) depending on the filter paper air flow resistance and dimensions. The bright LED readout displays multiple air sampling information including current flow rate, current elapsed sample time and totalized volume. The filter holder can be custom designed to accommodate any filter size and type. The DF-60810-MHVE-HSI standard model utilizes an 8"×10" (20,3×25,4 cm) filter.

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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

Over Current Protection: 15 Amperes resettable breaker

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: 65.9"H × 25.3"W × 25.3"D ~ (164,7H × 64,3W × 64,3 cm D)

Weight: Approximately 130 lbs. (59 kg)

Shipping Weight: Approximately 180 lbs. (81.8 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

Calculations/Determinations:

- Totalized volume, Reference T and P
- Current flow rate, Reference T and P
- Elapsed time

Factory Settable Reference T and P

Classical STP	0°C, 101.325 kPa
Normal T and P	20°C, 101.325 kPa
Modified Normal T and P	70°F, 101.325 kPa
Standard Ambient T and P	25°C, 101.325 kPa

Other System Features:

- Automatic shut off of system on totalized volume or elapsed time
- RS-232 port for real-time data download
- Utilization of 8"×10" (20,3×25,4 cm) filters
- Bright LED display
- Automatic flow control

Options:

- Data Storage Device (P/N: 232FCDS)
- 2 GB Secure Digital Card (P/N: 372239)
- Flash Card Reader (P/N:SDDR-199-A20)
- Heating element to prevent icing on the filter paper

Typical Maximum Flow Rates for DF-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



Digital Flow Meter Air Sampler Features

Operator Selectable Options:

Shut off Type	
On Time	0 min to 168 hours
On Volume	0 to 9.99×10 ⁹⁹
RS232 Output Frequency	1/sec, 1/min, 1/6min, 1/hr
Automatic Flow Control:	Operator selectable within the instrument's operating flow range

Factory Settable Options:

Flow/Volume units	sccm/scc, SLPM/SL, SCFM/SCF, sm ³ /hr, sm ³ /min
Temperature units	°C, °F
Pressure units	in.Hg, mmHg, kPa
Reference Temperature	0°C, 20°C, 70°F, 25°C
Reference Pressure	29.92 inHg (760 mmHg)
Display Dimming Function	On or Off
Auto Shut-off Function	On or Off
Flow Control	On or Off
Sampling Mode	Volumetric
Gas Type	Air
Language Options for Label	English, French

