



# F&J SPECIALTY PRODUCTS, INC.

*The Nucleus of Quality Air Monitoring Programs*

## DIGITAL FLOW METER AIR SAMPLING SYSTEM F&J MODEL DF-60810DTE-HSI

### NOTABLE FEATURES:

- Precision machined DP flow sensor
- Omni-directional hemispherical sample inlet
- State-of-the-Art electronics
- 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
- Dual RS-232 communication ports
- 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 1100 Watt motor
- 220-240VAC; 50/60Hz, single phase



### GENERAL DESCRIPTION:

The DF-60810DTE-HSI Series Air Sampling Systems are designed for remote unattended continuous air sampling applications. The DF-60810DTE-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 200 m<sup>3</sup>/hr (117 CFM) are attainable with glass fiber filter media. The DF-60810DTE-HSI Series design accommodates rapid field service and component replacement. An omnidirectional sample inlet made of a glass reinforced polymer material provides optimum 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 omnidirectional 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 top cover restricts unauthorized tampering with the filter holder.

The electronic flow control measurement sub-system of the DF-60810DTE-HSI Series provides an operator selectable reference standard corrected 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 between 30 - 200 m<sup>3</sup>/hr (18 - 117 CFM). The flow rate obtainable depends 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 many large filter size and type. The DF-60810DTE-HSI standard 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.

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**Performance:**

Basic components of the system are modular and independently serviceable. Sample flow rate can be set between 30 and 200 m<sup>3</sup>/hr (18 – 117 CFM). The standard filter holder has the dimensions 8”×10” (20,3×25,4 cm).

**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:\*** 30 to 200 m<sup>3</sup>/hr (18 – 117 CFM)  
(Depending on filter paper dimensions and air resistance)  
\* Approximate value for FP810M glass fiber filter media

**Ultimate Vacuum:** 22.2 kPa (89.21 inches H<sub>2</sub>O)

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

**Power Requirements:** 220-240VAC; 50/60Hz; 10 amperes; single phase.

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

**Dimensions:** 57.5”H × 21.5”W × 21.5”D      (146H × 54,6W × 54,6 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
- 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 volume

**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
- 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

**Optional Items:**

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

**TYPICAL MAXIMUM FLOW RATES  
1100 WATT VACUUM SYSTEM**

<b>STANDARD F&amp;J HINGED 8 X 10 FILTER HOLDER</b>						
<b>Filter Paper (8" X 10")</b>	<b>Maximum Flow Rate (m<sup>3</sup>/hr)</b>		<b>Maximum Flow Rate (LPM)</b>		<b>Maximum Flow Rate (CFM)</b>	
	<b>60 Hz</b>	<b>50 Hz</b>	<b>60 Hz</b>	<b>50 Hz</b>	<b>60 Hz</b>	<b>50 Hz</b>
FP810	130	108.2	2175	1811.7	76.8	63.9
FP810M	165	137.4	2765	2303.2	97.6	81.3
GC508X10IN	120	99.9	2013	1676.8	71.1	59.2
5211810	136	113.2	2278	1897.5	80.4	66.9
GC908X10IN	132	109.9	2215	1845.0	78.2	65.1
PG60	136	113.2	2278	1897.5	80.4	66.9
EPM2000	131	109.1	2185	1820.1	77.1	64.2
GA558X10IN	125	104.1	2088	1739.3	73.7	61.3
WH4140	126	104.9	2108	1755.9	74.4	61.9
C-569 (Yellow)	136	113.2	2280	1899.2	80.5	67.0
C-577 (Pink)	111	92.4	1855	1545.2	65.5	54.5
0054-0810	131	109.1	2195	1828.4	77.5	64.5
QR1008X10IN	112	93.2	1876	1562.7	66.2	55.1

## 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 <sup>99</sup>
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 <sup>3</sup> /hr, sm <sup>3</sup> /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

