



## F&J SPECIALTY PRODUCTS, INC.

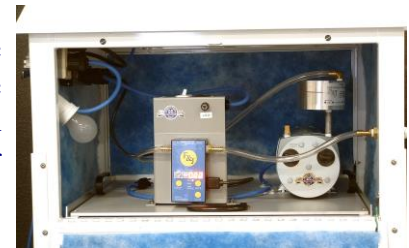
*The Nucleus of Quality Air Monitoring Programs*

# ENVIRONMENTAL LOW VOLUME AIR SAMPLER with DIGITAL FLOWMETER MODEL DF-2234 Series

### NOTABLE FEATURES:

- Display in English or metric units set at factory
- Choices of flow/volume units:
  - SLPM    SL
  - SCMH    SCM
  - SCFM    SCF
- State of the Art microprocessor electronics
- Flowrate and volume totalizations displayed are corrected to a factory settable Reference Temperature and Pressure (4 options available)
  - Classical STP                      0°C, 1 Atm
  - Normal T and P                      20°C, 1 Atm
  - Modified Normal T and P            70°F, 1 Atm
  - Standard Ambient T and P            25°C, 1 Atm
- Ambient or reference flow is selectable by operator
- Elapsed time meter
- Auto zero calibration feature of flow sensor
- Bright LED display
- Flow rate accuracy within  $\pm 4\%$  F.S.
- RS-232 Communication Port w/Operator selectable download frequency for real-time data
- Auto Shut-off on time or volume
- 110 – 120 VAC, 50/60Hz; single phase

View inside  
weatherhouse  
illustrating digital  
flowmeter



Full view illustrating  
the optional exterior  
gooseneck sampling  
system

### GENERAL DESCRIPTION:

The Model DF-2234 environmental air sampling system with digital flowmeter is a low-volume air sampler consisting of an oil-less, carbon vane vacuum pump, with a constant air flow regulator for use where a nearly constant air flow is desirable. The regulator holds a constant pressure drop across an in-line orifice, by varying the flow through a bypass valve into the pump. This system allows the pump to work at a minimum pressure drop at all times, permitting it to run cooler, thus extending its service life. The oil-less pump requires no lubrication to maintain optimal efficiency during its service life. The pump is mounted on a removable base plate, which can be secured within the WH-3 weatherhouse. The digital flowmeter has a large bright LED display.

The DF-2234 environmental air sampling system is designed for continuous outdoor use. Please consult the product specifications for the design temperature range and the installation category. Standard product displays flow rate, elapsed time and totalized volume by operator selection.

The typical operating range is 1 to 8 CFM (28 – 226 LPM).

# DF-2234 DIGITAL LOW VOLUME AIR SAMPLER (110-120VAC)

## SPECIFICATIONS:

**PUMP TYPE:** Oil-less, carbon vane, 3/4 HP, 1725 RPM @ 60 Hz

**MAXIMUM CAPACITY:** 8 CFM (226 LPM) at 0" Hg Pressure drop.

**ULTIMATE VACUUM:** 25"Hg (635 mm) Hg at sea level.

**POWER REQUIREMENTS:** 110-120VAC; 50/60 Hz @ 9 amperes; single phase

**FUSE PROTECTION:** 15 Amperes slow blow

**ELECTRICAL CORD:** All-temperature, 3-wire, 14 gauge

**THERMAL OVERLOAD PROTECTION:** Furnished as an integral part of the motor

**CONSTANT AIRFLOW REGULATOR:** Aluminum construction with silicone diaphragm; adjustable from 1 to 8 CFM (23-226 LPM).

**HANDLES:** 2-steel, on base plate

**DIMENSIONS:** 32"L x 26"W x 48 1/4" with Legs  
(81,3x66x61,6 cm)

**WEIGHT:** 112 lbs. (51 kg)

**OPERATING TEMPERATURE RANGE:**

32° - 104° F (-0° - 40° C)

**INSTALLATION CATEGORY:** Pollution Degree 3

**ENCLOSURE RATING:** IPX3

**VOLUME TOTALIZER:** Volume totalizations corrected to STP. Units are factory set.

## ELECTRONIC SPECIFICATIONS:

### MEASUREMENT ACCURACY:

Air flow +/- 4% of full scale

Temperature +/- 2° F (1.1° C)

Barometric Pressure 2 % over measured range

**CALIBRATION:** Factory calibration 1 per year

**COMMUNICATIONS INTERFACE:** RS-232

### ON-BOARD CALCULATIONS:

- Flow calculation from differential pressure value using best-fit curve method.
- Flow correction to reference temperature and pressure or ambient conditions
- Auto-zero correction utilizing electro-pneumatic method to compensate for offset and drift (automatic, once every minute).

**OPTIONS: SAMPLING HEAD:** External gooseneck sampling head mounted to weatherhouse

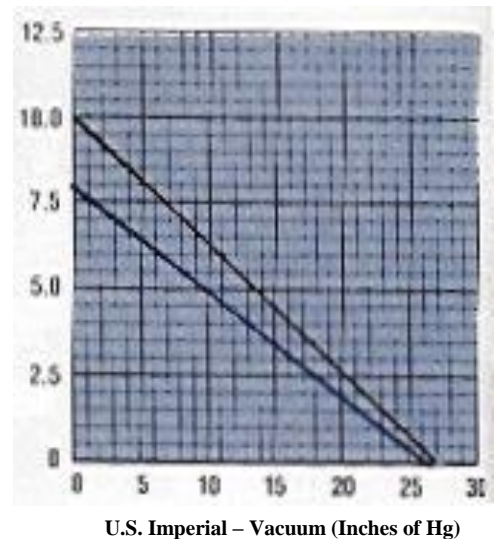
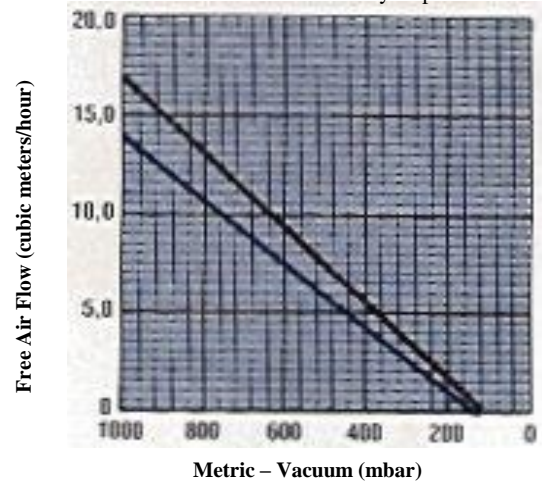
**COMBINATION FILTER HOLDER:** Durable plastic combination filter holders for F&J Model B, C or M charcoal cartridges and 47 mm, 2" or 50 mm diameter particulate filter paper are available. All models have quick-disconnect function.

## STANDARD COMBINATION FILTER HOLDERS:

<u>FILTER HOLDER MODEL</u>	<u>CHARCOAL CARTRIDGE DIMENSIONS</u>	<u>PARTICULATE PAPER DIAMETER</u>
FJ-05P	F&J Model B	2" or 50 mm
FJ-21P	F&J Model C	2" or 50 mm
FJ-35P	F&J Model B	47 mm
FJ-46P	F&J Model C	47 mm
FJ-51P	F&J Model M	2" or 50 mm

## PUMP CURVE

Top line on curve is for 60-cycle performance.  
Bottom line on curve is for 50-cycle performance.



## CONSTANT AIR FLOW REGULATOR CURVE TYPICAL PUMP OPERATING FLOW RANGE

