



**F&J SPECIALTY PRODUCTS, INC.**

*The Nucleus of Quality Air Monitoring Programs*

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## **MOBILE LOW VOLUME AIR SAMPLER with DIGITAL FLOW METER MODEL DF-14ME**



### **GENERAL DESCRIPTION:**

The Model DF-14ME cart mounted mobile low volume air sampler with digital flow meter has an adjustable, aluminum sampling gooseneck. The adjustable gooseneck permits sampling at heights varying from 122 cm to 213 cm above floor level. Model DF-14ME contains state of the art microprocessor electronics, which provides for corrected flow rate measurements, volume totalizations, and an RS232 communications port. It has a large bright LED display.

The DF-14ME Air Sampler includes an oil-less, carbon vane vacuum pump with a constant airflow regulator for use where a nearly constant airflow 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 head drop at all times, permitting it to run cooler, thus extending its lifetime. The oil-less pump requires no lubrication to maintain optimal efficiency during its service life. The pump is mounted on a mobile cart with two rubber wheels to permit mobile transportation of the unit.

The typical operating flow range is 0.5 to 4 CFM (14 to 115 LPM).

**Rev: 11 Nov. 2013**

## Standard Features:

- Bright LED Display
- Flowrate and volume totalizations displayed are corrected to a factory settable reference Temperature and Pressure (4 options available)
  1. Classical STP 0°C, 1 Atm
  2. Normal T and P 20°C, 1 Atm
  3. Modified Normal T and P 21.1°C (70°F), 1 Atm or
  4. Standard Ambient T and P 25°C, 1 Atm
- Reference or ambient flow conditions are operator selectable
- Elapsed time meter
- RS232 Data export in ASCII format in comma delimited text string at various operator selectable download frequencies
- Storage of elapsed time and volume in the event of power outage
- Detection of zero flow condition after return of power to pause elapsed time until flow returns
- Auto shut-off on time or volume
- Selectable engineering units for flow and volume (to be set at factory)

<u>FLOW</u>	<u>VOLUME</u>
sccm	scc
SLPM	SL
SCMH	SCM
SCFM	SCF

## Optional Features:

- Detection of zero flow condition to actuate a relay that provides an audible or visual alarm locally
- FlashCard Datalogger system to capture and store real-time data from the RS232 port.  
Data Storage Device: P/N: 232FCDS  
2+ GB Secure Digital Card: P/N: 372239  
FlashCard Reader: P/N: SDDR-199-A20

## STANDARD COMBINATION FILTER HOLDERS:

<b>FILTER HOLDER</b>	<b>CHARCOAL CARTRIDGE</b>	<b>PARTICULATE PAPER</b>
<b>MODEL</b>	<b>DIMENSIONS</b>	<b>DIAMETER</b>
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
FJ-53P	F&J Model M	47 mm

# DF-14ME DIGITAL LOW VOLUME AIR SAMPLER (220-240VAC)

## SPECIFICATIONS:

<b>PUMP TYPE:</b>	Oil-less, carbon vane 1/4 HP, 1725 RPM @ 60 Hz
<b>MAXIMUM CAPACITY:</b>	4 CFM (115 LPM) at 0" Hg Pressure drop
<b>ULTIMATE VACUUM:</b>	25" (635 mm) Hg at sea level
<b>POWER REQUIREMENTS:</b>	220 – 240VAC, 50/60 Hz; 3 amperes; single phase
<b>FUSE PROTECTION:</b>	6 amperes
<b>ELECTRICAL CORD:</b>	All temperature, 3 wire, 16 gauge
<b>THERMAL OVERLOAD PROTECTION:</b>	Furnished as an integral part of the motor
<b>CONSTANT AIRFLOW REGULATOR:</b>	Aluminum construction with silicon diaphragm; adjustable from 0.5 to 4 CFM (14-115 LPM)
<b>DIMENSIONS:</b>	46L × 38W × 122 – 213 cm H (18"L × 15"W × 4' – 7'H)
<b>INSTALLATION CATEGORY:</b>	Pollution Degree 2
<b>OPERATING TEMPERATURES:</b>	32°-122°F (0°-50°C)
<b>STORAGE TEMPERATURE:</b>	32°-158°F (0°-70°C)
<b>SAMPLING GOOSENECK:</b>	Adjustable 122 cm-213 cm sturdy aluminum
<b>WHEELS:</b>	8", Hard rubber
<b>WEIGHT:</b>	30,4 kg (67 lbs.)

## ELECTRONIC SPECIFICATIONS:

### MEASUREMENT ACCURACY:

Air flow:	+/- 4.0% 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 for standard temperature and pressure

Auto-zero correction utilizing electro-pneumatic method to compensate for offset and drift (automatic, once every minute)

### COMBINATION FILTER HOLDER:

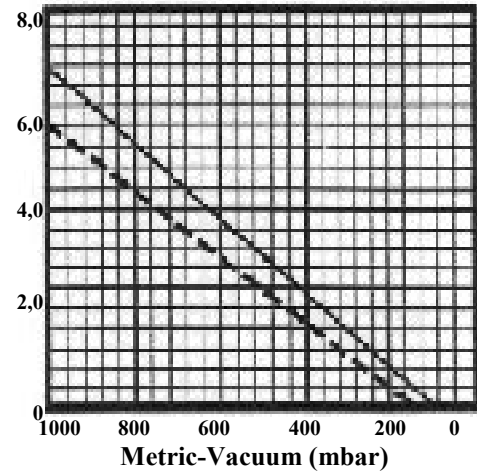
Durable plastic combination filter holders for F&J Model B, C or M charcoal cartridges and 47 mm, 2" or 50 mm diameter particulate filter paper are available. All models have quick-disconnect function.

## PUMP CURVE

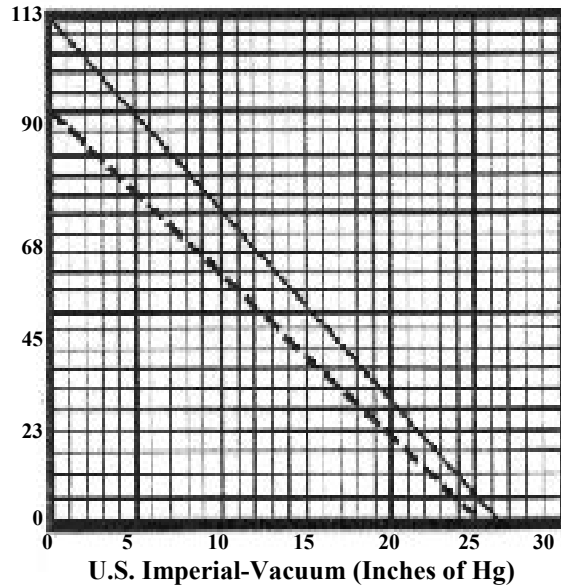
Top line on curve is for 60-cycle performance

Bottom line on curve is for 50-cycle performance

**Free Air Flow (cubic meters/hour)**



**Free Air Flow (LPM)**



**Free Air Flow (LPM)**

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

