



F&J SPECIALTY PRODUCTS, INC.

The Nucleus of Quality Air Monitoring Programs

LOW VOLUME AIR SAMPLER with DIGITAL FLOW METER MODEL DF-28BE-2G Series



GENERAL DESCRIPTION:

The Model DF-28BE-2G environmental air sampling system with digital flowmeter is a low volume air sampler consisting of a 1/4 H.P. oilless 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 oilless pump requires no lubrication to maintain optimal efficiency during its service life. The pump is mounted on a base plate within a weather resistant aluminum environmental enclosure having four rubber feet. Handles are provided on the enclosure to facilitate transportation. The digital flowmeter has a large bright OLED display.

The DF-28BE-2G is designed for continuous indoor or outdoor use. This unit can be adapted for tripod mounting if desired. Please consult the product specifications for the design temperature range and the installation category.

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

REV: 12 May 2025

DF-28BE-2G Digital Low Volume Air Sampler (200 – 240VAC)

Standard Features:

- Bright OLED 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 (electronic)
- 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>
SLPM	SL
SCMH	SCM
SCFM	SCF
- Internal Data Storage Downloadable as (.csv) file
- Data download via Type A USB port wired connection or through Bluetooth with optional Bluetooth Dongle for PC Device

Optional Features:

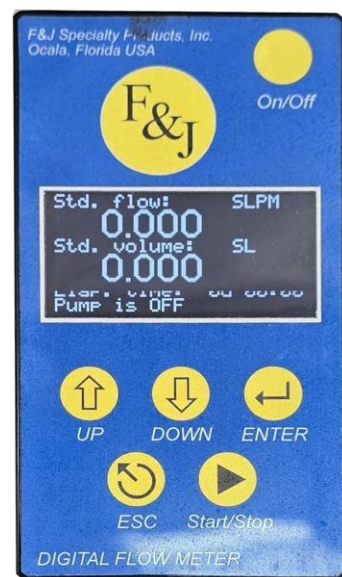
- Bluetooth Dongle for PC Device (P/N: BTDG)

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:

FILTER HOLDER MODEL	CHARCOAL CARTRIDGE DIMENSIONS	PARTICULATE PAPER DIAMETER
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



DFM Main Screen Display

DF-28BE-2G Digital Low Volume Air Sampler (200 – 240VAC)

SPECIFICATIONS:

PUMP TYPE:	Oilless, carbon vane 1/4 HP, 50/60 Hz, 1 PH
MAXIMUM CAPACITY:	4 CFM (115 LPM) at 0" Hg Pressure drop
ULTIMATE VACUUM:	25" Hg (635 mm) Hg at sea level
POWER REQUIREMENTS:	200 – 240VAC; 50/60 Hz; 3 amperes; single phase
CIRCUIT BREAKER PROTECTION:	6 amperes
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 0.5 to 4 CFM (14-115 LPM)
HANDLE:	Steel
DIMENSIONS:	19"L × 12 ½"W × 13 ¼"H (48,3L × 31,75W × 33,7 cm H)
NOISE LEVEL:	Average dB 64.3 @ 1 meter
WEIGHT:	59 lbs. (26,8 kg)
OPERATING TEMPERATURES:	32°-122°F (0°- 50°C)
STORAGE TEMPERATURES:	0°-122°F (-18°- 50°C)
INSTALLATION CATEGORY:	Pollution Degree 3
ENCLOSURE RATING:	IPX3

ELECTRONIC SPECIFICATIONS:

MEASUREMENT ACCURACY

Air flow:	± 4% of full scale
Temperature:	± 2.0°F (1.1°C)
Barometric Pressure:	2% over measured range

CALIBRATION:	Factory calibration once per year
COMMUNICATIONS INTERFACE:	Type A USB Port

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)

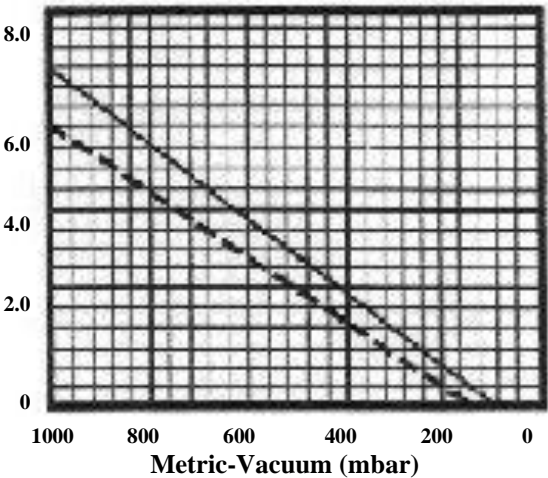
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PUMP CURVE

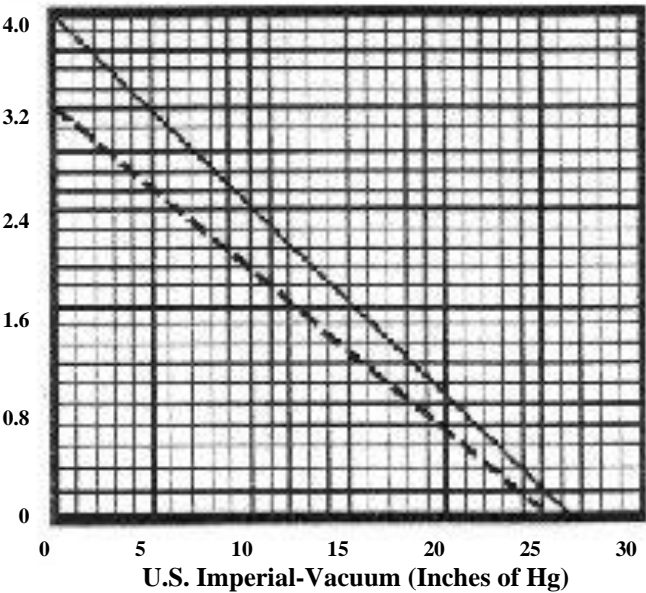
Top line on curve is for 60-cycle performance
Bottom line of curve is for 50-cycle performance

1425 RPM @ 50Hz
1725 RPM @ 60Hz

Free Air Flow (cubic meters/hour)



Free Air Flow (CFM)



Free Air Flow (LPM)

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

