



F&J SPECIALTY PRODUCTS, INC.

The Nucleus of Quality Air Monitoring Programs

ENVIRONMENTAL LOW VOLUME AIR SAMPLER with DIGITAL FLOW METER MODEL DF-EDL-22E Series

Full view illustrating
the exterior gooseneck
sampling system

View inside weather house
illustrating digital flow meter



CE



GENERAL DESCRIPTION:

The DF-EDL-22E environmental air sampling system with digital flowmeter is a low-volume air sampler consisting of brushless centrifugal blower with automatic electronic flow control. The vacuum air movement system is mounted on a removable base plate, which can be secured within the GFCI protected aluminum environmental weatherhouse, Model WH-3 having an enclosure rating of IPX3. The digital flowmeter has a large bright LED display.

The DF-EDL-22E environmental air sampling system is designed for continuous outdoor use. Please consult the product specifications for the design temperature range and the installation category. The standard product displays flow rate, elapsed time and totalized volume by operator selection.

The typical operating range is 0.5 to 4 CFM (14 – 115 LPM). Actual flow range implemented will depend the filter(s) utilized by the customer.

Rev: 31 May 2018

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 |
| Secure Digital Card: | P/N: 372239 |
| FlashCard Reader: | P/N: SDDR-199-A20 |
- 24VDC External power connector

SPECIFICATIONS:

| | |
|-------------------------------------|---|
| PUMP TYPE: | Centrifugal blower |
| MAXIMUM CAPACITY: | 6 CFM (180 LPM) at 0" Hg Pressure drop. |
| ULTIMATE VACUUM: | 20"Hg (635 mm) Hg at sea level. |
| POWER REQUIREMENTS: | 220-240VAC; 50/60 Hz @ 7 amperes; single phase |
| CIRCUIT BREAKER PROTECTION: | 10 Amperes |
| ELECTRICAL CORD: | All-temperature, 3-wire, 14 gauge |
| AIRFLOW REGULATOR: | Electronic |
| HANDLES: | 2-steel, on base plate |
| DIMENSIONS: | 32"L × 26"W × 48 ¼" with Legs (81,3 × 66,0 × 122,6 cm) |
| WEIGHT: | 82 lbs. (37.3 kg) |
| OPERATING TEMPERATURE RANGE: | 32°-104° F (0°- 40° C) |
| INSTALLATION CATEGORY: | Pollution Degree 3 |
| ENCLOSURE RATING: | IPX3 |
| VOLUME TOTALIZER: | Volume totalizations corrected to a Reference T and P. Units for volume are factory set. |

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 or Calibration Verification on-site

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).

OPTIONS:

SAMPLING HEAD: External gooseneck sampling head mounted to weatherhouse

COMBINATION FILTER HOLDER: Durable plastic or aluminum 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:

(PLASTIC)

FILTER HOLDER

MODEL

FJ-05P
FJ-21P
FJ-35P
FJ-46P
FJ-51P
FJ-53P

CHARCOAL CARTRIDGE DIMENSIONS

F&J Model B
F&J Model C
F&J Model B
F&J Model C
F&J Model M
F&J Model M

PARTICULATE PAPER DIAMETER

2" or 50 mm
2" or 50 mm
47 mm
47 mm
2" or 50 mm
47 mm

(ALUMINUM)

FILTER HOLDER

MODEL

FJ-05
FJ-21
FJ-35
FJ-46
FJ-51
FJ-53

DF-EDL-22E DIGITAL LOW VOLUME AIR SAMPLER (220-240VAC)

Typical Maximum Flow Rates for Various Filter Media*

| Filter Media | Flow Rate (SCFM) | Flow Rate (SLPM) | Media D.P.(“Hg) | Media D.P.(“H₂O) |
|---------------------|-------------------------|-------------------------|------------------------|------------------------------------|
| FP47 | 3.49 | 98 | 3.22 | 43.78 |
| FP47M | 5.76 | 163 | 2.13 | 28.96 |
| FP47M2 | 8.43 | 238 | 1.31 | 17.81 |
| FP47 & TE2C | 2.76 | 78.11 | 3.55 | 48.26 |
| FP47M & TE3C | 4.28 | 121 | 2.85 | 38.75 |
| FP47M2 & TE1C | 5.36 | 151.69 | 1.79 | 24.34 |
| FP20M | 5.40 | 152.82 | 1.80 | 24.47 |
| FP20M & TE2C | 3.83 | 108.39 | 2.95 | 40.11 |
| FP20M & TE3C | 4.22 | 119.43 | 2.67 | 36.30 |
| FP40M | 11 | 310 | 0.77 | 10.47 |

* FJ200RB motor

Environmental Air Sampling System Designed for Continuous Outdoor Use

1. Available in WH-3 or larger optional WH-3A enclosure

2. Air sampler component can be easily exchanged



3. Air sampler component can also be used as a light weight portable air sampler

4. Modem can be connected to instrument for periodic data transmission to a central location