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DL-1E Digital Low Volume Air Sampler

230 V/50 Hz portable air sampler featuring flow control, flow and totalized volume corrections to STP, RS232 communications.



DL-1E

DL-1E LOW VOLUME AIR SAMPLER

Digital Electronic Features

- Precision machined venturi flow sensor
 - Microprocessor controlled electronics.
 - Flow rate measurement and volume corrected to STP.
 - Display in English or metric units.
 - Programmable chain of custody identification.
 - RS232 communication port.
 - Flow rate accuracy within +/- 2.5% of full scale.
 - Auto zero calibration feature of flow sensor.
 - Various sampling modes to select from.
 - Data storage up to 10 days.
 - Multiple on-board calculations with display.
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Description

Model DL-1E air sampling system is a microprocessor controlled low volume air sampler consisting of an 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 head drop at all times, permitting it to run cooler and thus extending its lifetime. The oilless pump requires no lubrication to maintain optimal efficiency during its service life. The pump is mounted on a base with four rubber feet. A handle is provided on the chassis to facilitate transportation. A plastic combination filter holder is a standard accessory included in the price.

Specifications

Pump Type	Oilless, carbon vane; 1/4 HP; 1725 RPM.
Maximum Capacity	4.5 CFM (126 LPM) at 0" Hg pressure drop.
Ultimate Vacuum	25" Hg (635 mm Hg)at sea level.
Electrical Cord	All temperature, 3 wire, 16 gauge.
Combination Filter Holder	A durable plastic combination filter holder for either F&J Model B, C or M charcoal cartridges and 47 mm or 50 mm diameter particulate filter paper are available. All models have a quick disconnect function.
Constant Air Flow Regulator	Aluminum construction with silicone diaphragm; adjustable from 0.5 to 4.5 CFM (10 to 126 LPM).
Fuse Protection	6 amperes.
Handles	Black painted steel.
Dimensions	16" L x 7 1/2" W x 13 1/4" H. (40.6 cm x 19 cm x 33.6 cm).
Weight	38 pounds.
Power	230 VAC, 50 Hz; 2.5-2.8 amperes, 1/4 HP.

Electronic Specifications

Measurement Accuracy	Air Flow	+/- 2.5% of full scale.
	Temperature	+/- 0.9 degrees F (+/- 0.5 degrees C).
	Barometric Pressure	1% over
measured range.		
Operating Temperatures	-40 to 122 degrees F (-40 to 50 degrees C).	
Storage Temperature	32-158 degrees F (0-70 degrees C).	
Calibration	Factory calibration once per year.	
Communications Interface	RS-232	
Data Storage	Simultaneous data storage of all measured parameter in non-volatile memory; time and date stamp on records; data storage for continuous sampling: - one data point per minute for maximum 24 hours or - six data points per hour for a maximum of 10 days.	
	Optional reporting of all stored data and/or summary record for computer or local printer via RS-232 serial	

link.

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 differential pressure offset and drift (automatic, once every minute).

Minimum and maximum values of measured parameters.

Standard Combination Filter Holders Available

Filter Holder Model	Charcoal Cartridge Dimensions	Particulate Paper Diameter
FJ-05P	F&J model B	2" or 50 mm
FJ-21P	2 1/4" D x 1" H	2" or 50 mm
FJ-35P	F&J Model B	47 mm
FJ-46P	2 1/4" D x 1" H	47 mm
FJ-51P	Scott type	2" or 50 mm
FJ-53P	Scott type	47 mm