



F&J SPECIALTY PRODUCTS, INC.

The Nucleus of Quality Air Monitoring Programs

GLOBAL LOW VOLUME AIR SAMPLER F&J Model GAS-1

NOTABLE FEATURES:

- Precision machined DP flow sensor
- State-of-the-Art electronics
- Vacuum fluorescent display; 4 line × 24 characters
- Flow rate and volume measurements corrected to operator selectable Reference Temperature and Pressure
- Constant air flow regulator
- Display in English or various metric units
- Dual RS-232 communication ports
- Flow rate accuracy: $\pm 3.0\%$ Full Scale
- Auto zero calibration feature of flow sensor
- Various operator selectable sampling modes
- Multiple operator selectable data storage and data transmission frequency rates
- Display of Multiple on-board calculations
- Wide temperature range electronics



GENERAL DESCRIPTION:

The Model GAS-1 Global Air Sampling System is a microprocessor controlled low-volume air sampler consisting of 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 venturi 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 service life. The oil-less 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.

The GAS-1 has a bright VFD that has four (4) lines by 24 characters and utilizes wide temperature range electronic components for use in extreme ambient conditions.

The GAS-1 Global Air Sampling system is designed for continuous indoor use. 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: 01 March 2022

GAS-1 Low Volume Air Sampler Specifications

PUMP TYPE:	Oil-less, carbon vane ¼ HP, 1725 RPM @ 60 Hz
MAXIMUM CAPACITY:	4.3 CFM (122 LPM) @ 0" Hg Pressure drop
ULTIMATE VACUUM:	25" (635 mm) Hg @ sea level
POWER REQUIREMENTS:	100-120VAC; 50/60Hz; 6 amperes, single phase
CIRCUIT BREAKER PROTECTION:	10 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:	Black Painted Steel
DIMENSIONS:	16"L × 7 ½"W × 13 ¼" H (40,6×19×33,6 cm)
WEIGHT:	43 lbs. (19,5 kg)
INSTALLATION CATEGORY:	Pollution Degree 2
OPERATING TEMPERATURES:	32°F - 122°F (0° - 50°C)
STORAGE TEMPERATURE:	-40°F – 158°F (-40°C – 70°C)

ELECTRONIC SPECIFICATIONS:

AIR FLOW	± 3.0% of full scale
TEMPERAURE	± 0.9°F (0,5°C)
BAROMETRIC PRESSURE	1% over measured range
CALIBRATION:	Operator calibration-verification 1 per year
COMMUNICATIONS INTERFACE:	Dual RS-232
DISPLAY:	VFD, 4×24 characters

DATA STORAGE:

Simultaneous data storage of all measured parameters in non-volatile memory; time and date stamp on records.

Multiple operator selectable data storage options

Optional reporting of all stored data and/or summary record for host computer or local printer via RS-232 serial link

Multiple operator selectable RS232 output frequency

ON-BOARD CALCULATIONS:

Flow calculation from differential pressure value using best fit curve method

Flow correction for operator selectable reference temperature and pressure

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

Minimum and maximum values of measured and calculated parameters

COMBINATION FILTER HOLDERS AVAILABLE:

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.

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