

F&J SPECIALTY PRODUCTS, INC.

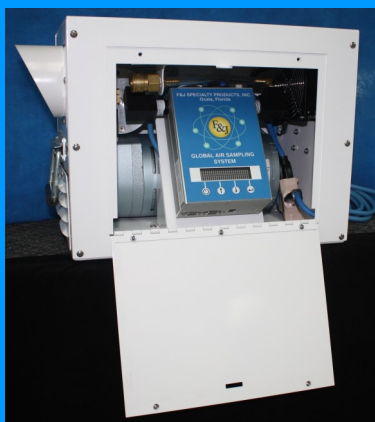
The Nucleus of Quality Air Monitoring Programs

GAS LOW VOLUME AIR SAMPLERS

100 — 120 VAC



GAS-1



GAS-28B



GAS-22



GAS-28BMHT-THB

Rev: 16 December 2020

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).

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:

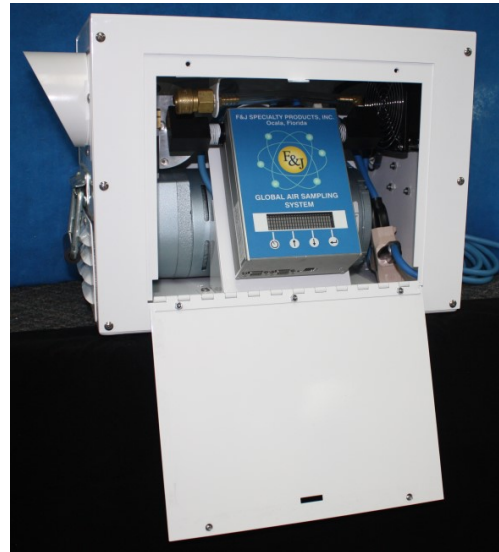
Durable plastic combination filter holders for F&J Model B, C or M charcoal cartridges and 47 mm, 2" or 50 mm diameter particulate filter paper are available. All models have quick disconnect function.

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

GLOBAL LOW VOLUME AIR SAMPLER F&J Model GAS-28B

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-28B Global Air Sampling System is a microprocessor controlled low volume air sampler consisting of an ¼ H.P. oil-less 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 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 plate within a weather resistant aluminum environmental enclosure having four rubber feet. Handles are provided on the enclosure to facilitate transportation. The enclosure rating is IPX3.

The GAS-28B utilizes a bright VFD that has four (4) lines by 24 characters and utilizes wide temperature range electronic components for use in extreme ambient conditions.

This unit 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).

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)
DIMENSIONS:	19"L × 12 ½"W × 13 ¼" H (48,3×31,75×33,7 cm)
WEIGHT:	59 lbs. (26,8 kg)
INSTALLATION CATEGORY:	Pollution Degree 3
ENCLOSURE RATING:	IPX3

ELECTRONIC SPECIFICATIONS:

Air flow	± 3.0% of full scale
Temperature	± 0.9°F (0,5°C)
Barometric Pressure	1% over measured range
OPERATING TEMPERATURE:	0° - 122°F (-18° - 50°C)
STORAGE TEMPERATURE RANGE;	-40° - 158°F (-40° - 70°C)
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. Data storage for continuous sampling:

Optional reporting of all stored data and/or summary record for host 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 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 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

GLOBAL LOW VOLUME AIR SAMPLER F&J Model GAS-22

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-22 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 removable base plate, which can be secured within the GFCI protected aluminum environmental Weatherhouse, model WH-3 having an enclosure rating of IPX3.

The GAS-22 utilizes 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-22 Global Air Sampling System is designed for continuous outdoor 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).

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)
Dimensions: 32”L × 26”W × 48 ¼” H (w/legs)(81.3×66×122.6 cm)
Weight: 112 lbs. (51 kg)
Installation Category: Pollution Degree 3
Enclosure Rating: IPX3

ELECTRONIC SPECIFICATIONS:

Air flow: ± 3.0% of full scale
Temperature: ± 0.9°F (0,5°C)
Barometric Pressure: 1% over measured range
Operating Temperature: 32° - 122° F (0°- 50° C)
Storage Temperature Range: -30° - 158°F (-34° - 70°C)
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. Data storage for continuous sampling:
 Optional reporting of all stored data and/or summary record for host computer or local printer via RS-232 serial link

On-Board Calculations:

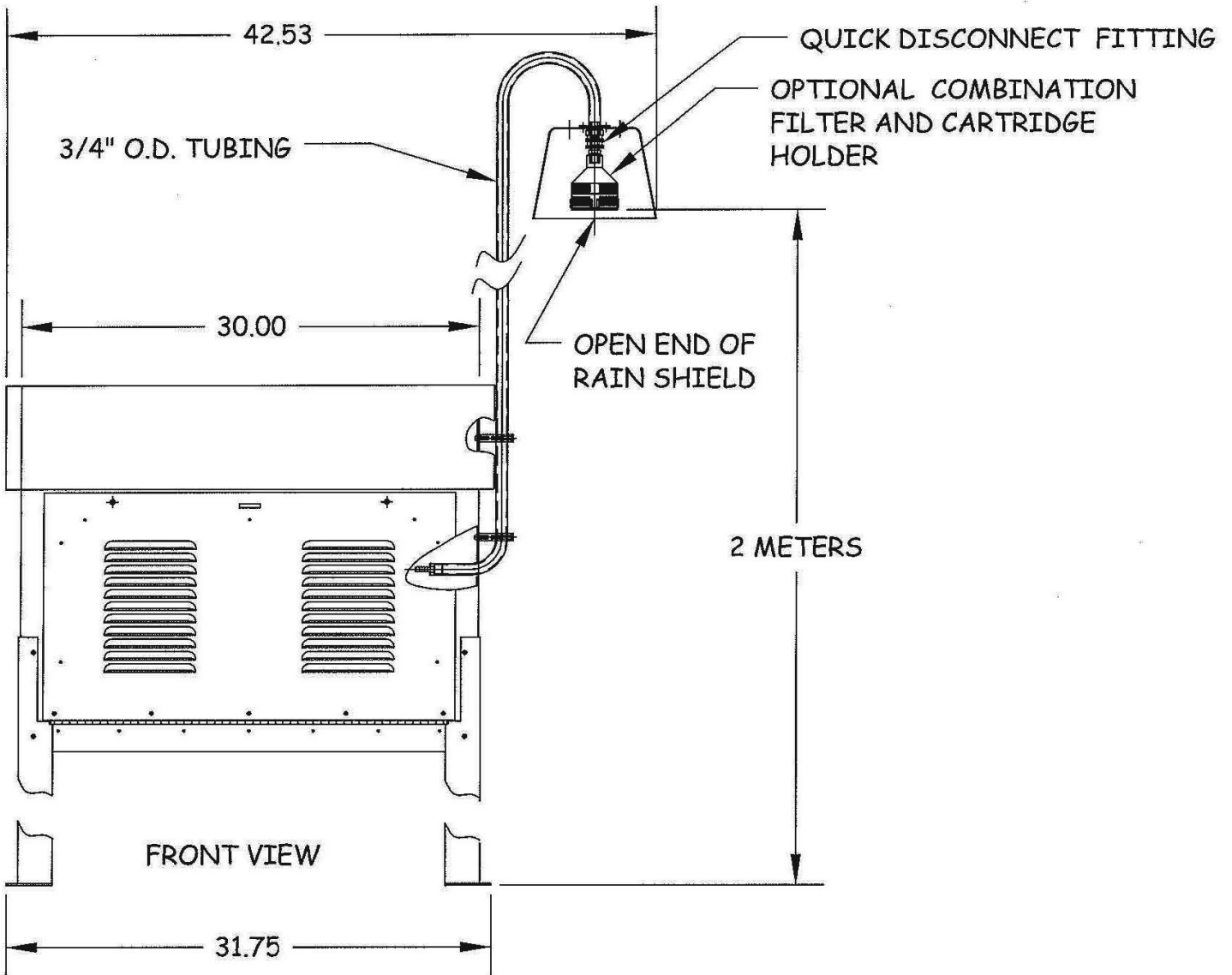
Flow calculation from differential pressure value using best fit curve method
 Flow correction for operator selectable reference temperature and pressure
 Auto-zero correction utilizing electro-pneumatic method to compensate for offset and drift (automatic, once every minute)
 Minimum and maximum values of measured 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

GOOSENECK SAMPLING SYSTEM P/N: 2108GN

Standard DOE Design Vertical Arrangement



Environmental Air Sampling System with external standard DOE style Gooseneck sampling assemble 3/8"

MOBILE LOW VOLUME AIR SAMPLER W/GLOBAL AIR SAMPLER GAS-28BMHT-THB

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
- Internal heating system for low temperature environments



GENERAL DESCRIPTION:

The Model GAS-28BMHT-THB heavy duty hand truck mounted mobile low volume air sampler designed for outdoor use with Global Air Sampler flow management system and an adjustable, aluminum sampling gooseneck. The adjustable gooseneck permits sampling at heights varying from 4' to 7' above floor level. Model GAS-2828BMHT-THB contains state of the art microprocessor electronics, which provides for corrected flow rate measurements, volume totalizations, dual RS232 communications port, and a USB port. The air sampler is contained in a powder coat painted environmental enclosure mounted ~ 4 inches above ground level.

The GAS-28BMHT-THB utilizes 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-28BMHT-THB 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 pressure 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. An internal heating system ensures smooth function in low ambient temperatures. The pump is mounted on a rugged mobile hand truck with two 10.5" diameter pneumatic tires to facilitate mobile transportation of the unit.

The GAS-28BMHT-THB is designed for continuous indoor or outdoor 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 to 115 LPM) depending upon resistance of air filters utilized.

SPECIFICATIONS:

PUMP TYPE: Oil-less, carbon vane 1/4 HP, 1725 RPM @ 60 Hz
HEATING ELEMENT: Tubular Socket-Mount Type, 100W, 120VAC
MAXIMUM CAPACITY: 4 CFM (115 LPM) at 0" Hg Pressure drop
ULTIMATE VACUUM: 25" (635 mm) Hg at sea level
POWER REQUIREMENTS: 110 – 120VAC, 50/60 Hz; 7 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 (10-115 LPM)
DIMENSIONS: 24"L × 21"W × 55"H (61cm × 53 cm × 140 cm)
SAMPLING GOOSENECK: Adjustable to 7' (213 cm) sturdy aluminum
WHEELS: 11"D, pneumatic tires
WEIGHT: 86 lbs. (39 kg)

OPERATING TEMPERATURE RANGE: 20° to 122°F (-7° to 50°C)

ELECTRONIC SPECIFICATIONS:

MEASUREMENT ACCURACY:

Air flow: +/- 4.0% of full scale
 Temperature: +/- 2.0°F (1.1°C)
 Barometric Pressure: 2% over measured range

CALIBRATION: Calibration verification 1 per year

COMMUNICATIONS INTERFACE: RS-232, USB

DISPLAY: VFD, 4×24 characters

DATA STORAGE:

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

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

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 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

ELECTRICAL SURGE PROTECTION FOR REMP AIR SAMPLING SYSTEMS P/N: FJ-SSI-AS-02



Surges or power line transients are brief overvoltage spikes or disturbances on a power wave form which can damage, degrade or destroy electronic equipment and motors. Externally generated transients include utility grid switching, magnetic coupling and nearby or direct lightning strikes.

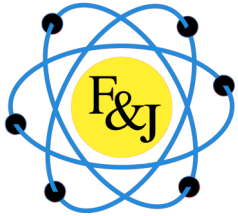
F&J SPECIALTY PRODUCTS, INC. (F&J) recommends the use of a “Surge Protective Device” (SPD) for both analog and digital air samplers utilized in REMP air sampling applications. F&J has commissioned a leading manufacturer of SPDs in the USA to design and develop a product that would protect air sampling instruments utilized in NPP REMP programs from the negative effects of power line surges.

Dimensions:	7.3”L × 4.8”W × 2.5”H
Weight:	1.97 lbs. (.90 kg)
Receptacles;	Two (2) 125VAC, 15A standard USA female grounding receptacles powered by one standard USA male plug
Test Standard;	IEEE Std C62.41.2 TM – 2002 and IEEE Std C62.62 TM —2010

References:

- IEEE Std C62.41.1TM–2002—IEEE Guide on the Surge Environment in Low-Voltage (1000 V and less) AC Power Circuits
- IEEE Std C62.41.2TM–2002—IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits
- IEEE Std C62.62 –2010—IEEE Standard Test Specifications for Surge-Protective Devices (SPDs) for use on the Load Side of the Service Equipment in Low-Voltage (1000 V and less) AC Power Circuits

These are the standards that describe the surge environment and govern performance specifications of SPDs.



F&J SPECIALTY PRODUCTS, INC.

The Nucleus of Quality Air Monitoring Programs

PRODUCT PROFILE

Air Sampling Systems

- High Volume Air Samplers
 - Portable Grab Samplers
 - Environmental Systems
 - Enzyme Dust Samplers
 - PM10 Systems
- Continuous Air Samplers
 - Environmental Systems
 - Portable
 - Fixed Station
- Personal Air Samplers
- Emergency Response DC Powered Air Sampling Systems

Filter Paper

- Glass Fiber
- Cellulose
- Membrane
- Quartz

Filter Holders

- Open face
- In-Line
- PAS Filter Holders
- Materials
 - Plastic
 - Aluminum
 - Stainless Steel

Radon Detection Devices

- 2-Day Passive Charcoal Canisters
- 7-Day Passive Charcoal Canisters
- Continuous Radon Monitors

Tritium Detection Systems

- Portable and Fixed Station Collection Systems utilizing Silica Gel or Molecular Sieve Absorbents
- Continuous Tritium Monitors

New Products

- Global Air Sampling Systems
- Digital Flowmeter Air Samplers
- C-14 Collection Systems
- ELITE DIGITAL LIGHT (EDL) Air Samplers
- Isokinetic Air Sampling Systems
- MEGA High Volume Air Samplers
- ULTRA High Volume (CTBTO) Air Samplers

Radioiodine Collection Cartridges

- TEDA Impregnated Charcoal
- Silver Zeolite
- Custom Cartridges
- Bulk Silver Zeolite

Air Flow Calibrators

- World Calibrator Series
- Compact Digital V.2 Series
- Mini-Calibrator