



Clean Air Filter // *Quality Tested. Performance Proven.*

2203 HWY 59 Po Box 212 Defiance, IA 51527
712 748 3642 cleanairfilter.com

FILTRATION / PROTECTION SYSTEM (FPS)

FPS-955.2 SERIES FPS-55.2 SERIES
115/230 VAC 12/24 VDC

INSTALLATION INSTRUCTIONS

The CAF FPS is designed to provide clean, filtered air in a microenvironment.
"We Clean The Air You Breathe".

CAF is in a unique position to be able to completely characterize enclosed environmental cabs in our laboratory test chamber and in the field. The system performance is a combination of filter performance and cab integrity. CAF utilizes these test procedures to determine the overall protection that the cab provides to the worker (cab protection factor).

"Worker protection" is a critical factor in the design and operation of enclosed environments. CAF develops / tests / manufactures filters and pressurization systems for mobile equipment to assist in protecting operators from particulates and vapors. Each unit is constructed of heavy gage powder coated metal.

Clean Air Filter's goal is to provide a sound solution based on patented technology, onsite testing and education to ensure systems serve their purpose efficiently for the end user.





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VISUAL INSPECTION OF THE CABIN

Check places where there is a potential for leakage.

- Examples:
- 1) Door seals
 - 2) Window seals
 - 3) Hoses and electrical harness grommets through to exterior
 - 4) All holes created to connect accessories through to exterior

NOTE: The more places sealed that have leakage potential, the greater your chances of having a good Positive internal pressure



Positive pressure is not an indication of operator protection.

For additional information see https://www.cleanairfilter.com/static/NA_CAB-Pressure-Cab-Protection-Levels-2a8818508ae0e9cfeae4c416e70172cb.pdf

OPERATIONAL OPTIONS



For operator safety, DO NOT run unit without proper filter installed.

The FPS-955 is designed with two air intakes.

- 1) Recommended: Use one intake for fresh air, use other intake for recirculation. Recirculation will assist in reducing particulates that enter the cabin on persons entering.
- 2) Use both intakes for fresh air.

Pictured is one of many installation possibilities Each installation is unique and may require a different configuration depending on the application and contaminants.





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MOUNTING THE SYSTEM

Determine location

The system may be mounted / installed indoors or outdoors (IP rating 64)


Choose a location that does not obstruct operator view

CAUTION: Do not mount the FPS Inlet near the equipment exhaust.

Mount unit above and as close to the AC/heat coil plenum as possible

Mount so that output will be conditioned by the AC/heater coils before entering the cab.

HVAC inspection to ensure that leaks are minimal

 Warning: Always check before drilling the cab structure

Do not drill into the heating and evaporator coil

Do not drill into the wiring harness or electric components.

Check cab manufacturer recommendations for ROPS and FOPS standards.

Unit must be mounted in horizontal position

Mounting surface may be horizontal or vertical.

Unit inlet should be upwards (12h) to prevent moisture from entering the system

Mounting holes are pre-drilled in the housing, remove plastic plugs.

Use template to locate hole placement for drilling.

Stable FPS utilizing all four (4) 3/8" bolts, torque 23lbs, included.


"FPS" AIR OUTLET CONNECTION TO THE CABIN


FPS-A-955-005, Flange Kit (not included)



1. Remove the current fresh air intake panel and filter from cabin.
2. Using 4" hole saw, create inlet in a manifold. (blank metal plate) designed to cover intake
3. Mount flange to manifold using silicone and bolts
4. Cover cabin intake with the manifold securing with silicone and screws (not included).
5. Attach outlet of FPS to flange using 3" or 4" smooth wall flexible or rigid pipe (not included), assuring joints are well sealed.

If the cabin has no fresh air inlet, install the flange directly to the cabin wall.
It is strongly recommended to route the clean air through the current HVAC.

 The clean air outlet duct between the FPS and the cabin must be 100% sealed to assure no contaminated air can be drawn into the cab through the non-sealed joints.

 All fresh air inlets, other than system outlet, must be closed/plugged.



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WIRING INSTRUCTIONS –

 Unit must be wired with lock out / tag out for service and or maintenance.

The appropriate disconnect / plug / control device is application specific to be determined and installed by a qualified electrician or personnel familiar with the operation of the unit.

The ground to underground must be connected first, prior to any other connections.


An appropriate fuse, not included, must be installed.

IF CONNECTED TO A CIRCUIT PROTECTED BY FUSES, USE TIME-DELAY FUSES MARKED “D”

On/off can be performed by plug or disconnect (not included), but is not recommended. To provide safety and consistent performance, a start/stop device is not supplied/recommended, possibly life critical. The need of such controls including the implementation of an emergency stop, shall be confirmed by risk assessment during installation.

The system should be wired to run continuously while equipment is operator occupied.

Electrical compartment includes only non-serviceable parts

 Hard wire connectors are not to be utilized for disconnect purposes during service/maintenance.

 NOT SUITABLE FOR USE WITH SOLID-STATE SPEED CONTROLS

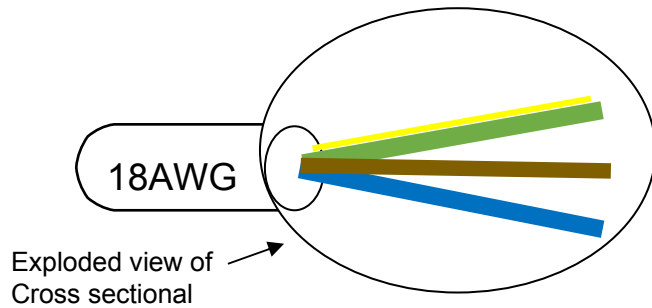


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230 VAC:

Power Consumption: FPS-955-220.2, 1.4 amps @ 230 VAC



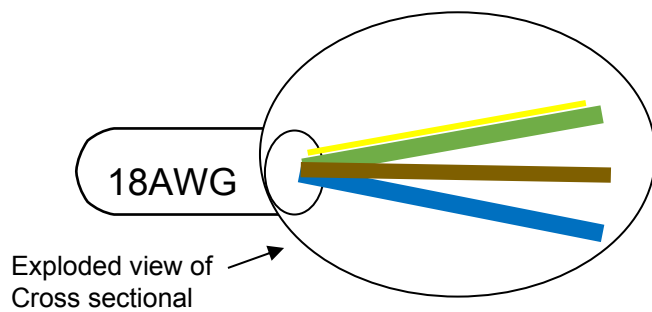
Green/Yellow = P.E. Ground ↓

Brown = Line Voltage

Blue = Line Voltage

115 VAC:

Power Consumption: FPS-955.2, 1.80 amps @ 115 VAC



Green/Yellow = P.E. Ground ↓

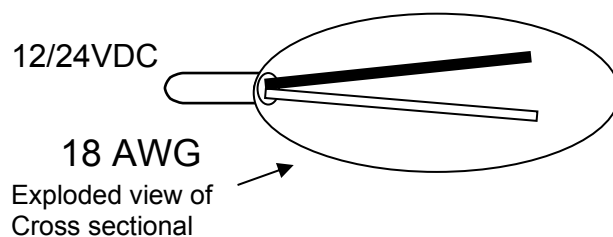
Brown = Line Voltage

Blue = Neutral

12/24 VDC:

Power Consumption: FPS-5524.2, 1.30 amps @ 24 VDC

FPS-5512.2, 2.30 amps @ 12 VDC



Black = Negative ↓

White = Positive



Connections by certified electrician or qualified personnel.



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Filter Installation:

 **Disconnect unit from Electrical Supply prior to installation / service**
Failure to comply will expose to moving parts

Install filter on mounting tree within the system housing, see figure

Thread the rubber washer with the rubber next to the filter. Do not push.

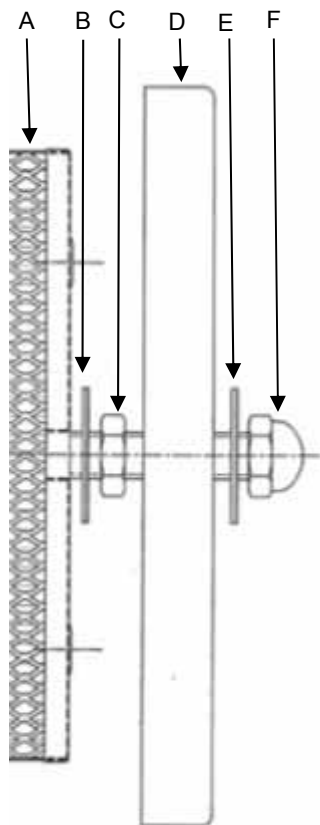
Apply anti seize lubricant on the bolt

Place nut (c) and tighten at 50 in/lb. Do not overtighten. (Filter should not rotate/spin with hand).

Replace the filter access panel

Thread the rubber washer with the rubber next to the access panel. Do not push

Replace the nut and tighten to hold panel



FILTER INSTALLATION

- A) Filter
- B) Rubber Washer – rubber next to filter
- C) Nut – tighten till filter will not spin by hand – do not overtighten
- D) Filter access panel
- E) Rubber washer – rubber next to access panel
- F) Acorn nut – tighten to hold panel



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Maintenance

 **Disconnect unit from Electrical Supply prior to installation / service**
Failure to comply will expose to moving parts

Filter life depends on several factors:

Exposure (time, wind, humidity, etc)

Chemical (chemical structure, volatility, concentration, etc)

Replace

Annually

When odor, taste, or other symptom from contaminant is detected.

Flow rate drops below 18 cfm for 1 occupant, or 22 cfm for 2 occupants


Consult Industrial Hygienist

Dispose of filter in accordance with Federal, State, and Local Laws/Regulations

 Carbon section of the filter CANNOT be cleaned or refilled.

Unit may be wiped out with a damp cloth if necessary

 Use appropriate PPE when servicing/cleaning unit or replacing filter.

 Residual risks:
Electrical moving fan
Electrical compartment contained and sealed, includes only non-serviceable parts.

*Not for use in explosive environments.

Shipping

For transporting or relocation of the system:

To avoid injury, use proper lifting techniques.

To avoid damage or injury, do not handle, lift, by the pre-cleaner.

To avoid damage or injury, follow mounting instructions for replacing.

To avoid damage or injury, follow wiring instructions for replacing.



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SPECIFICATIONS

Disconnect unit from power source prior to servicing and/or replacing filter

	FPS955.2	FPS955220.2	FPS5524.2	FPS5512.2
Power Requirement	115 VAC 60Hz	230 VAC 50/60Hz	24 VDC 16-28 V	12 VDC 8-14 V
Speed	3000 min-1	2860 min-1	3900 r/min	3900 r/min
Power Input	185-215 W	170 W	28 W	28 W
Current Draw	1.62-1.8 A	1.4 A	1.3 A	2.3 A
Motor Protections	Thermal overload protector (TOP) wired internally	Thermal overload protector (TOP) wired internally	Reverse polarity-locked-rotor protection	Reverse polarity-locked-rotor protection
Motor Capacitor	20 μ F			
Capacitor voltage	220 VDB			
Mounting position	Horizontal	Horizontal	Horizontal	Horizontal
Max ambient temp	55° C	60° C	60° C	60° C
Min ambient temp	-25° C	-25° C	-25° C	-25° C
Max altitude	2,000 meter	2,000 meter	2,000 meter	2,000 meter
Max. ambient temp (trans/storage)	+80° C	+80° C	+80° C	+80° C
Min ambient temp (trans/storage)	-40° C	-40° C	-40° C	-40° C
Ingress Protection	IP64	IP64	IP64	IP64
Decibel Rating	75 dB(A)	78 dB(A)	63 dB(A)	63 dB



EN 60204-2018 / EN 60529 1991 COR 2016

For additional assistance please contact **Clean Air Filter®** @ 712 748 3642



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OPTIONAL ACCESSORIES

Pre-Cleaner on 2 ½" adapter plate – FPS-A-CPE006.1: Mounted on the FPS inlet to reduce large particulates from entering the system minimizing dust loading. Aids in filter life.

Differential Pressure Gage – FPS-DPG.25: Mounted within the cabin to monitor cab pressure. Aids in determining filter replacement.

4" Flange Kit – FPS955-005: Aids In connection of FPS outlet to cabin

Inlet Adapter Plates, various sizes