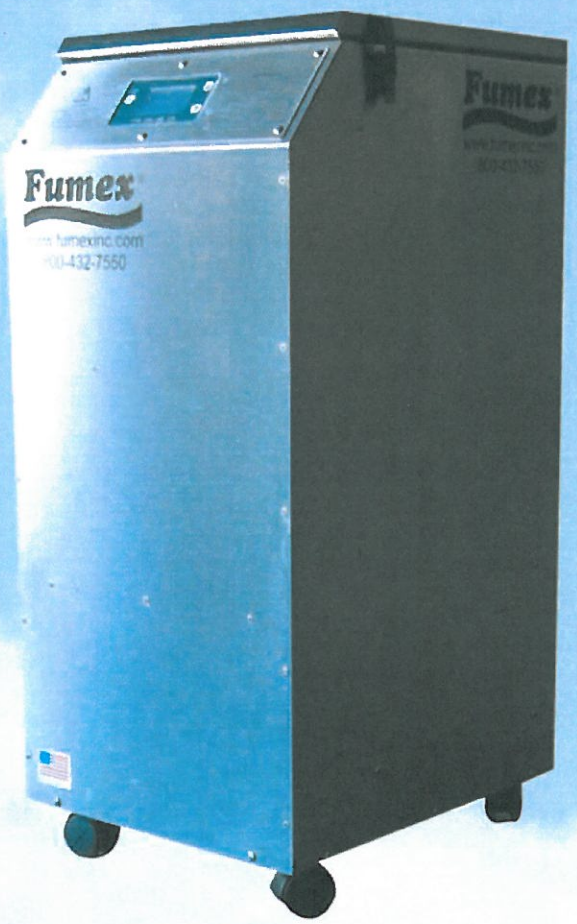
FA2

Operations Manual



STANDARD FEATURES & OPTIONS

- ***Multi-stage*** high efficiency air cleaner
- ***Digital control panel***
- ***Variable*** speed high performance blower
- Individual high capacity filters
- ***Large capacity pre-filter***
- ***99.97% efficient HEPA filter***
- Gas/odor filter w/ broad spectrum gas/odor control
- Integrated electronic gas sensor
- C-UL Listed

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Air Filtration Systems

WARNING
Disconnect from power supply before servicing electric motors or other electric components or changing filters or cabinet cleaning.

WARNING
For general ventilating use. Do not use to exhaust flammable or explosive vapors or materials.

CAUTION
Do not operate without having all filters in place

GETTING STARTED

Initial set-up

1. Open all cartons & locate wheels, inlet and hose/clamps.
2. Remove ALL filters & packing materials from inside the unit
3. Place unit on its side & install wheels in bottom plate
4. Remove plastic wrap from the gas/odor filter. Carefully remove and dispose of perforated panels from both sides of the filter exposing the "foam" material. Place filter into cabinet – note direction of airflow arrow.
5. Place HEPA filter on top of the gas/odor filter – note airflow arrow
6. Install the large capacity pre-filter. Filter will fit securely onto the inlet nipple. Preferred method is to drop filter into place, slightly raise the back of the box (the end towards the front of the cabinet) and gently press the filter into place.
7. Close and latch lid.
8. Install inlet attachment to the FA2 cabinet (screws are threaded into the cabinet for shipping)
9. Install one end of hose on external air inlet nipple – tighten clamp

INSTALLATION

Locating the Air Cleaner –

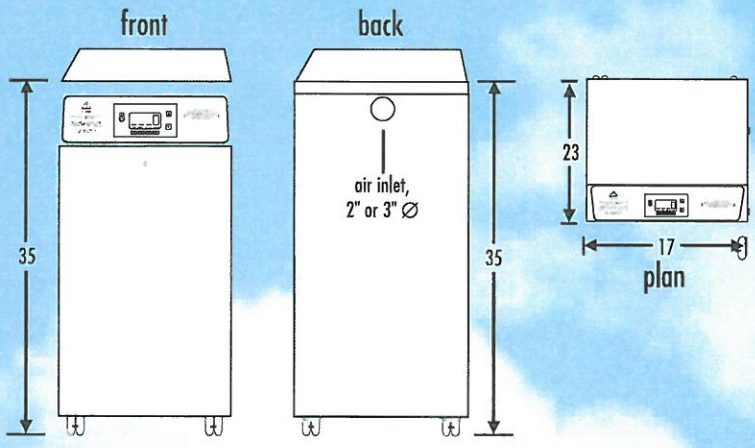
- Place the unit as close as possible to the pollution source to minimize back-pressure and maximize performance
- Placement should minimize hose length and the number of bends
- Allow for top-access to the filter compartment
- Unit exhausts through the bottom panel – allow for adequate ventilation

Electrical connections -

Ensure proper electric power is available – Refer to label on rear of cabinet for proper Electrical requirments.

Extraction point

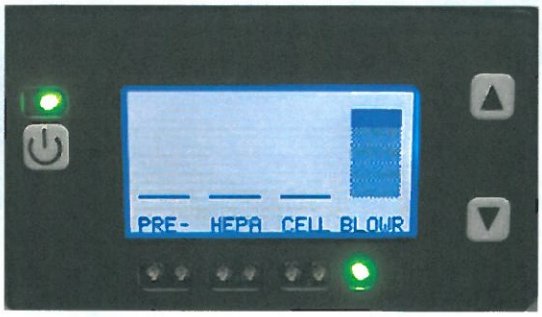
Place the distal end of the hose as close to the pollution source as possible. Use capture hoods with high efficiency entry whenever possible.



CONTROLS

Blower

The FA2 utilizes a variable speed blower. The arrow keys located on the control panel control the blower – solid bars represent speed.
The blower has 10 settings. Recommended setting is 7.
Use arrows to regulate blower speed. In normal operation the blower light will display green.
Note: Blower gradually increases in speed as arrow is pressed - some slight delay is normal operation.



Particle Filters

The system utilizes pressure differential switches to monitor the pre-filter (part# FA140B-2) and the HEPA filter (part# FA100). Indicator bars will increase in 25% increments as the filter is used. As a filter becomes completely loaded a solid bar is displayed and a warning light will illuminate.

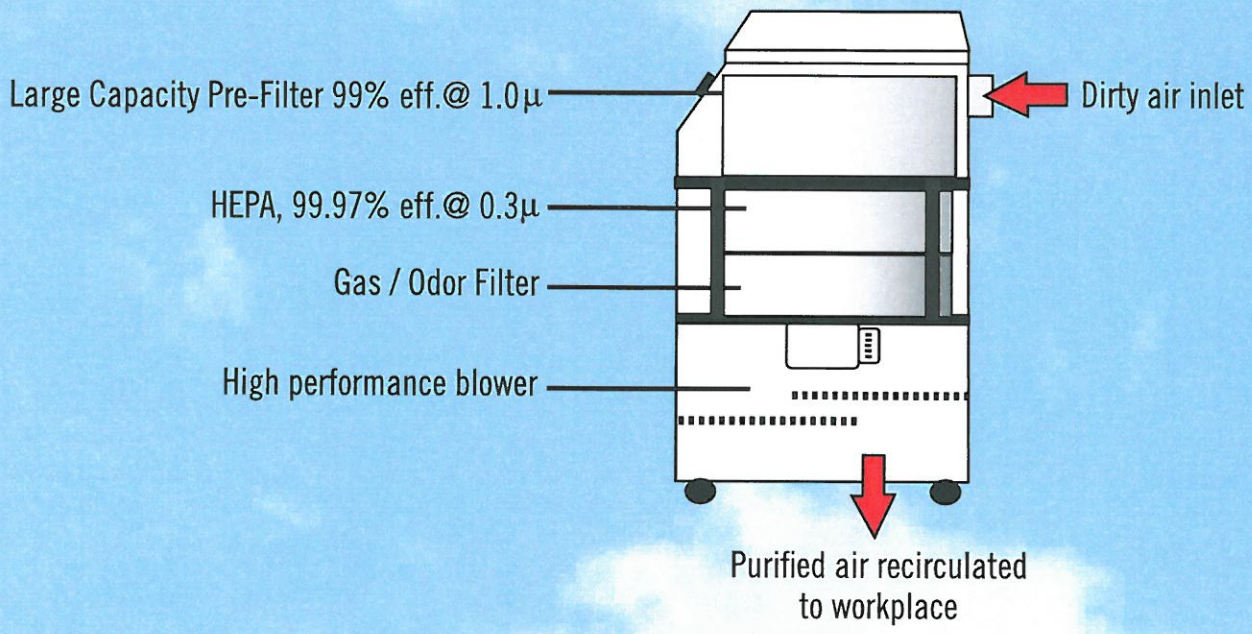
Gas Filter

The system contains a VOC indicator to detect odors/gases. When the filter becomes saturated a solid bar will display and warning light will illuminate.

GENERAL FILTER CARE

Multi-stage, high efficiency Fumex FA2 air purifiers feature a multi-stage filtration system designed to remove a wide range of process pollutants from macro to molecular in size with near100% efficiency and in a cost-effective manner. Initially high capacity pre-filters remove particulate as small as 1μ at a 99% efficiency level – the air is then passed through a HEPA filter that futher improves the air quality level to 99.97% @ 0.3 μ. Final filtration is provided by a combination of adsorbent/ chemisorption media that provides high-efficiency removal of a wide range of hazardous, odorous gases and vapors.

FA2 STANDARD
filter arrangement



GENERAL MAINTENANCE

1. The blower motor is a sealed unit, 24,000 hr. MTBF rated. It is permanently lubricated and does not require oiling – periodically remove dust accumulations to prevent overheating.
2. Remove loose accumulations of dust/debris from the air filter chamber periodically.

TROUBLE - SHOOTING GUIDE

Problem	Possible Cause	Recommended action
Red pre-filter light	Pre-Filter loaded to capacity	Replace pre-filter
Red HEPA light	HEPA filter is loaded	Replace HEPA Filter
Red cell light	Completely saturated gas/odor filter	Replace gas odor/filter (cell)
Blower not running	Blower overheat condition	Complete power disconnect will reset thermal protection. Allow adequate time for blower too cool before restarting.
(Green light is OFF)	Blower failure	Replace blower/motor assembly
	A completely (clogged) filter(s)	Replace filters
	Restricted airflow at "pick-up" point	System does not detect sufficient airflow - enlarge diameter of hose/nozzle, hood.
	Faulty front PCB	Replace front PCB
At start-up unit cycles then shuts off	Relay package is "activated" but not receiving input signal	Apply 0 - 24 v to relay - (See wiring diagram)
		De-Activate the relay package
No power to unit	Blown fuse	Replace fuse
	Electrical /Power issue	Verify unit specification to power supplied
Unit not controlling odor	Poor pick-pick up at source	Increase blower speed
		Use high efficiency funnel hood
	Gas/odor filter (CELL) is saturated	Replace gas/odor filter
	Incorrect filter specification	Call Fumex for assistance in specification
	Very high concentrations of gas pollutants	Add additional capacity - FD100 filter

Replacement Parts

Part #	Item	Part #	Item
	Cabinetry		**Electrical**
FA108	Wheels, standard	FA110F	Blower motor ass'y, 120/1/50-60
FA108A	Wheels, locking	FA110G	Blower motor ass'y, 240/1/50-60
FA109	Isolators	FA113B	Fuse holder
FA117	Cabinet latch	FA114C	Fuse, 15amp (120vac)
FA118	Cabinet hinge	FA114	Fuse, 10amp (240vac)
		FA115	Cordset (120vac)
FA121	3"Øx 2"Ø reducer,	FA115B	Cordset (240vac)
FA123P	4"Ø x 3"Ø reducer, plastic	FA116	Cord restraint
FA225	2"Ø exhaust adapter	FA001	Front panel PCB
FA226SS-3	Air inlet - 3"Ø	FA002	Power PCB
FA226SS-2	Air inlet - 2"Ø		
	Filters		**Gas Filter / Adsorbents**
FA100	HEPA filter	FA201D	A/C + A/A cell w/ KMnO4, 15 lb. (standard)
FA140B-2	Large Capacity pre-filter	FA201C	Activated carbon, 10 lb.
		FA201E	Acidex Cell
	Accessories		**Accessories**
FA145-2	Flex rubber hose, 2"Ø smooth bore	A-28-2	Articulating source-capture arm, 2"Ø
FA145-3	Flex rubber hose, 3"Ø smooth bore	A-28-3	Articulating source-capture arm, 3"Ø
FA145-6	Flex rubber hose, 6"Ø smooth bore	FA122	Slot hood, 1"x 4" - metal
FA120-2	Hose clamp, 2"Ø	FA125	Funnel hood, 2"Ø hose, polished aluminum
FA120-3	Hose clamp, 3"Ø	FA127	Funnel hood, 3"Ø hose, polished aluminum
		FA149	"y" adapter

Warranty & Liability Limitations

Fumex FA2 air cleaners are guaranteed for 24 months from date of original invoice to be electrically and mechanically sound. This warranty covers the material and workmanship only. Any defective item will be repaired or replaced, at our option, free of charge provided it has not been misused, abused or otherwise damaged and is returned PREPAID to:
Fumex, Inc., 1150 Cobb International Place, Kennesaw, GA 30152.

There are no warranties which extend beyond the descriptions set forth in this warranty, notwithstanding any knowledge of Fumex, Inc. regarding the use or uses intended to be made of goods, proposed changes or additions to goods, or assistance or suggestions that may have been made by Fumex, Inc. personnel. Customer is responsible for determining the suitability of Fumex Inc. products for customer's use or resale, or for incorporating them into objects or applications which customer design, assembles or constructs or manufactures.

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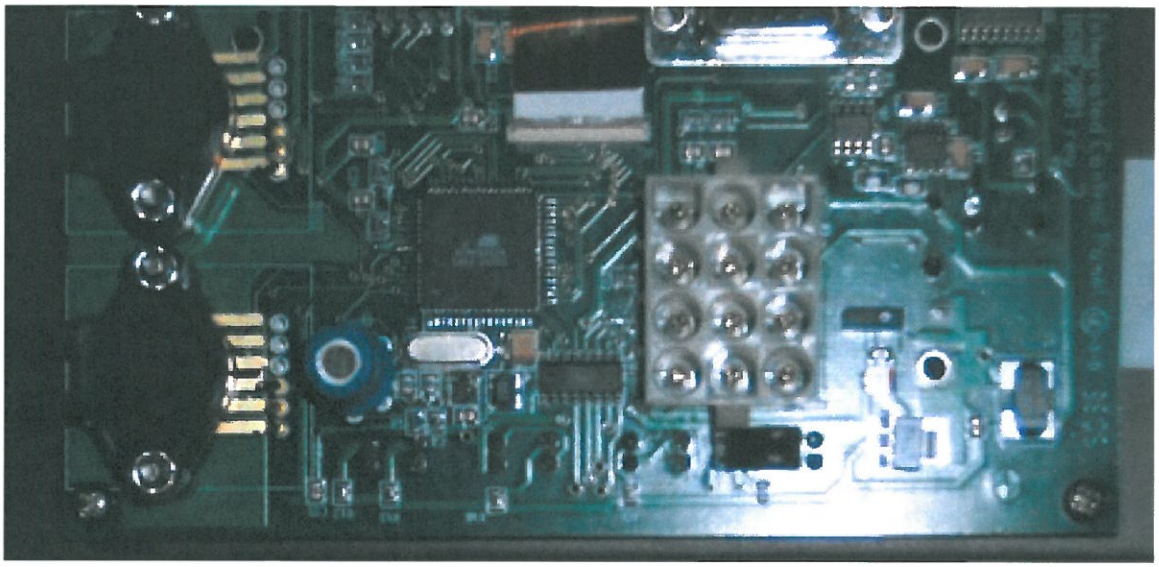
RELAY ACTIVATION PROCEDURES FOR FA2 UNIT

1. Remove all power sources from FA2 unit
2. Locate six screws securing unit control panel
3. Remove all six screws and gently pry Control panel loose

CAUTION

Do not allow panel to hang from hoses or interface cable



Relay activation jumper **Relay activation jumper**

4. Locate relay activation Jumper on control panel. (Small plastic rectangle) There are two possible locations depending on which board revision you have
5. Gently remove jumper by pulling cap off pins. Shorting cap should be installed over a single pin for storage and to prevent loss of cap.

Once the jumper has been removed the unit will only start by applying the proper voltage to the start stop relay. When the unit is running the on and off switch can be used as long relay has power.

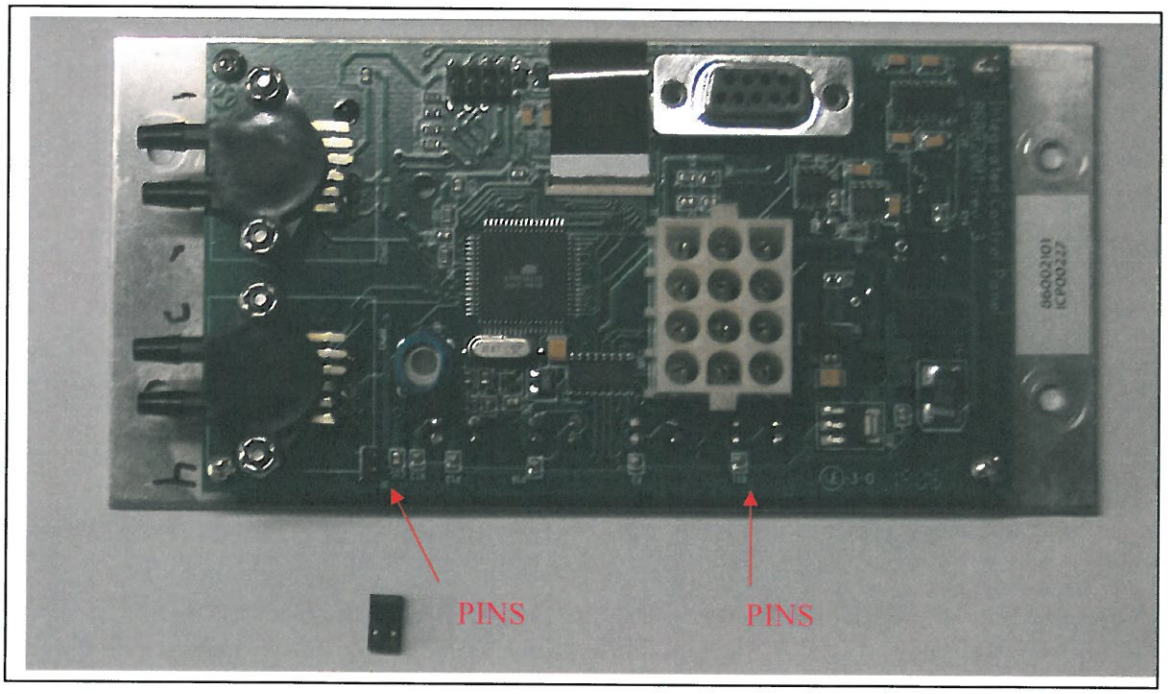
6. Reinstall control panel and screws
7. Apply power to start relay (see wiring diagram for your unit)

RELAY DE-ACTIVATION

1. Disconnect all power sources to FA2 unit.
2. Locate and remove (6) screws securing the control panel
3. Remove all six screws and gently pry Control panel loose

CAUTION

Do not allow panel to hang from hoses or interface cable



4. Locate relay activation pins 2 contact pins as noted in picture.
There are two possible locations depending on which board revision you have
5. Gently install jumper by pushing cap over pins.

Once the jumper has been installed the unit will can only be started by using the control panel. All relays will become non-functional.

6. Reinstall control panel and screws
7. Apply power to unit
8. Start Unit

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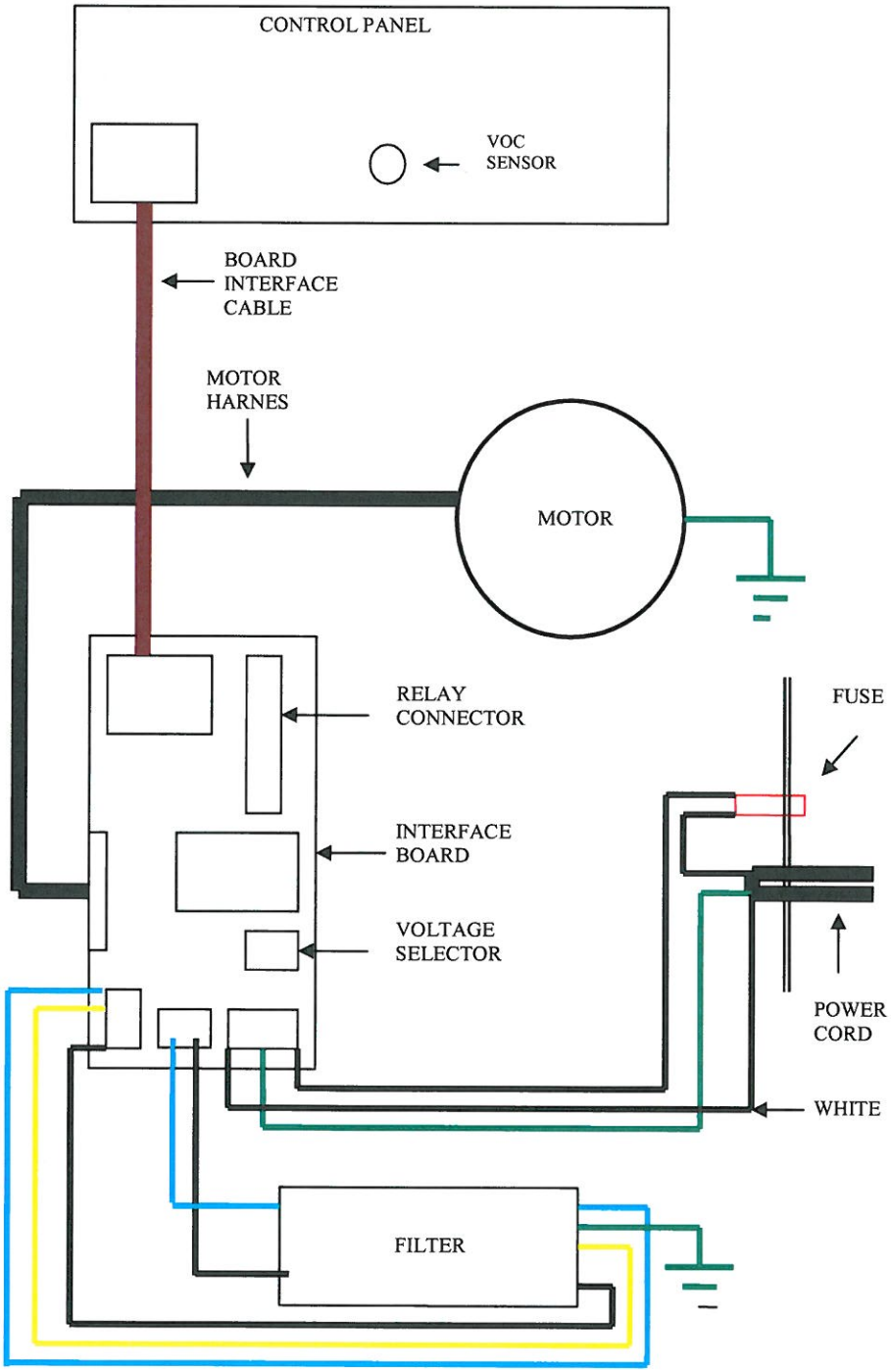
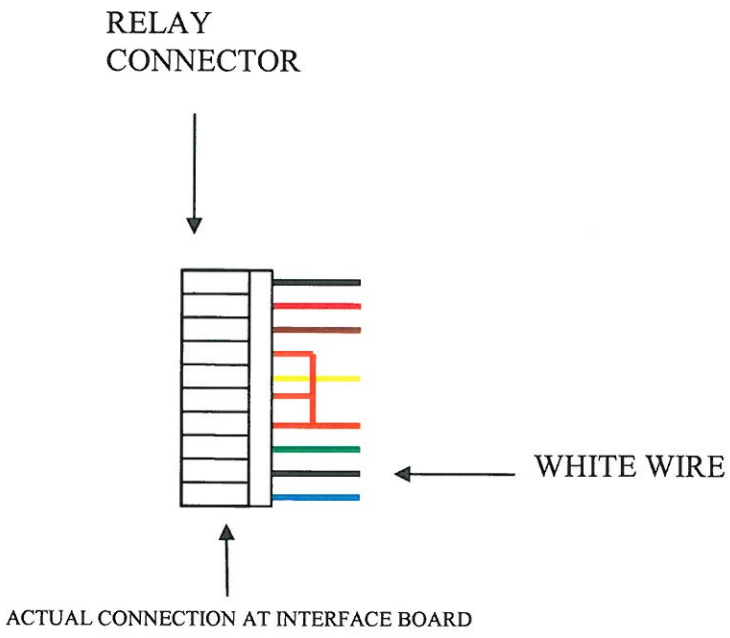
FA2SS DIGITAL UNIT
120/240/1/60



FA2SS DIGITAL UNIT
120/240/1/60

1	BLACK	24 VOLT START OUT (NEG)
2	RED	24 VOLT START IN (POS)
3	BROWN	CELL WARNING SIGNAL
4	ORANGE	POWER FOR WARNING LIGHTS
5	YELLOW	HEPA WARNING SIGNAL
6	ORANGE	POWER FOR WARNING LIGHTS
7	ORANGE	POWER FOR WARNING LIGHTS
8	GREEN	PRE FLT/ BAG WARNING SIGNAL
9	WHITE	DRY CONTACT (BLOWER)
10	BLUE	DRY CONTACT (BLOWER)



REMOTE CONNECTION TO
FA2 Air Filtration System

The FA2 system with digital display provides four output and one input relay to interface the unit to an external PLC for remote control. The function of the relays and the interface electrical specifications are as follows:

function	*description*	*I/O*	*state*	*rating*
PRE	This output is energized when the pre-filter requires replacement.	output	N.O., relay closes on full bag event	3A-24 VDC 3A-250 VAC
HEPA	This output is energized when the HEPA filter requires replacement.	output	N.O., relay closes on full HEPA event	3A-24 VDC 3A-250 VAC
CELL	This output is energized when the CELL requires replacement.	output	N.O., relay closes on full CELL event	3A-24 VDC 3A-250 VAC
BLOWER GOOD	This output is energized when the blower is functioning properly.	output	N.C., relay opens on failed blower event	3A-24 VDC 3A-250 VAC
REMOTE START	When the instrument is configured for remote blower operation, this relay must be energized from an external source to turn on the blower and front panel. The unit can be run locally by replacing the remote enable link behind the display panel, which will restore control to the front panel enable button.	input	Apply external DC power to energize the system remotely.	24 VDC @ 20 mA (12 VDC optional)

The remote system should allow 4 seconds for flow pressures to stabilize before monitoring the "BLOWER GOOD" signal remotely; in normal operation this signal will lag until the correct flow pressures are detected. The output signals for element replacement faults are internally buffered and require no additional delay for use.