



**MODEL GS3-500
Air Filtration System**

Operations Manual

READ AND SAVE THESE INSTRUCTIONS

WARNING:



Disconnect from power supply before performing maintenance procedures such as cabinet cleaning, changing filters or servicing of electric motor or other electric components

WARNING:



To reduce the risk of fire or electric shock, do not use this fan with any solid-state speed control device.

CAUTION:

For general ventilation use only. Not for use in hazardous environments.

GETTING STARTED

Initial set-up

1. Remove the GS3-500 unit from the packaging and locate and open the accessory box.
2. Open the GS3-500 cabinet and remove the protective packaging from the gas/odor filter(s) (part# FA501D). Replace the filter into the cabinet noting the airflow direction arrow should point up.
3. The Pre-filter (Part# FA540B) is preinstalled - simply verify the filter is in position.
4. Close and latch the front door.
5. The GS3-500 is now ready for use.

Locating the air cleaner:

Placing the GS3-500 as close as possible to the pollution source reduces the amount of hose or duct needed, reduces back-pressure, lowers power consumption and improves overall performance. Wheels are standard equipment on the GS3-500, but rubber isolators are available if the unit is to be placed permanently in position. If you prefer isolators, call 800-432-7550 to arrange a no-charge exchange.

Inlet hose attachment:

Install the air inlet flange (labeled) to the air inlet port located at the back bottom of the GS3-500 cabinet. Secure the port with the screws provided. Attach the hose to the inlet. Connect the hose to a Fumex suction hood or place as close as possible to the pollution source.

Electric power

Locate the Fumex nameplate located on back of cabinet to determine the power supply necessary. The GS3-500 is configured for 220-250/1/50-60 power supply.

CONTROLS

On/Off Switch

Simple on/off power button located on front display - green light indicates power to the unit.

Blower/Fan

The GS3-500 utilizes a variable speed blower with 10 speed settings. Press the up /down arrows to increase and decrease the blower speed. Blower gradually increases in speed as arrow is pressed - some slight delay is normal operation. Speed is indicated by the bar graph located above blower label. A green light will indicate that the blower is operating – no light indicates a blower failure.

Filter monitoring

The GS3-500 contains a VOC indicator to detect odors/gases in the exhaust stream. The system continually monitors the exhaust stream and indicates on the bar graph labeled “cell”. When breakthrough is detected the amber light will illuminate indicating a filter change is necessary.

GENERAL FILTER CARE

Fumex GS3-500 air purifiers feature a multi-stage filtration system designed to remove a wide range of pollutants from the process plume in an extremely efficient, cost-effective manner.

STANDARD FILTERS:

Part # FA540B – Pre-filter Assembly

The pre-filter assembly is the first stage in the filtration process. Unique design minimizes operator/maintenance personnel exposure to contaminants.

Part # FA501D – Gas/Odor Filter (CELL)

Most process plumes contain several gases, some odorous – some not, some toxic at elevated concentrations – some completely harmless regardless of concentration. To ensure employee safety the type and concentration of pollutants must be determined. Please contact Fumex Engineering for selection assistance.

The GS3-500 utilizes a blended activated carbon and activated alumina impregnated with KMnO₄ filter to capture and treat gases/odors. This combination of materials provides protection across a broad range of gases commonly found in industrial manufacturing processes.

Replacement:

The gas/odor filter (“cell”) life is dependent on the concentrations and characteristics of the gases generated in the process. The GS3-500 monitors the effectiveness of the filter with an integrated electronic VOC sensor that will indicate with amber light when “breakthrough” is detected. Some gases have very low odor thresholds and will become a nuisance prior to filter saturation indicator and can be changed accordingly.

GENERAL MAINTENANCE

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

“This product employs overload protection (fuse). A blown fuse indicates an overload or short-circuit situation. If the fuse blows, unplug the product from the outlet. Replace the fuse as per the user servicing instructions (follow product marking for proper fuse rating) and check the product. If the replacement fuse blows, a short circuit may be present and the product should be discarded or returned to an authorized service facility for examination and/or repair”

Remote Interface/Connectivity

The GS3-500 can be supplied with an optional interface package providing remote start/stop and filter monitoring capabilities. Please see below for instructions.

R e p l a c e m e n t P a r t s

Part #	Item	Part #	Item
	Cabinetry		Electrical
FA508	Wheels, standard	FAAU1100	Blower motor assembly – 220-250/1/50-60
FA509	Vibration Isolators		
FA517	Cabinet latch	FA501-2	Display board assembly
FA518	Cabinet hinge	FA502	Power board assembly
		FA514A	Fuse, 20 amp
FA506-3	Flanged air inlet nipple, 3"Ø		
FA506-4	Flanged air inlet nipple, 4"Ø	FA515B	Cordset (230vac)
FA506-6	Flanged air inlet nipple, 6"Ø	FA513	Fuseholder
	Filters		Gas / Odor Filters
FA500	HEPA filter - Optional	FA501D	Blended carbon filter
FA540B	Pre-Filter	FA501C	Activated carbon filter

W a r r a n t y a n d L i a b i l i t y l i m i t a t i o n s :

Fumex GS3-500 air cleaners are guaranteed for 24 months from date of 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 Pl., 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 any assistance or suggestions that may have been made by Fumex personnel. Customer is responsible for determining the suitability of Fumex products for customer's use or resale, or for incorporating them into objects or applications which customer designs, assembles, constructs or manufactures.

Fumex reserves the right to discontinue any item and to make changes in the specifications, terms and conditions or prices at any time without prior notice. Information furnished in the specifications is believed to be accurate and reliable at time of printing, however Fumex accepts no responsibility for product use, or the effect of future design or specification changes.

For Assistance or Technical Support please Contact Fumex Inc.

phone 770-514-7907

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USA toll-free 800-432-7550

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RELAY ACTIVATION PROCEDURES FOR GS3-500 UNIT

1. Remove all power sources from GS3-500 unit
2. Locate six screws securing unit control panel
3. Remove all and gently pry Control panel loose six screws

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.

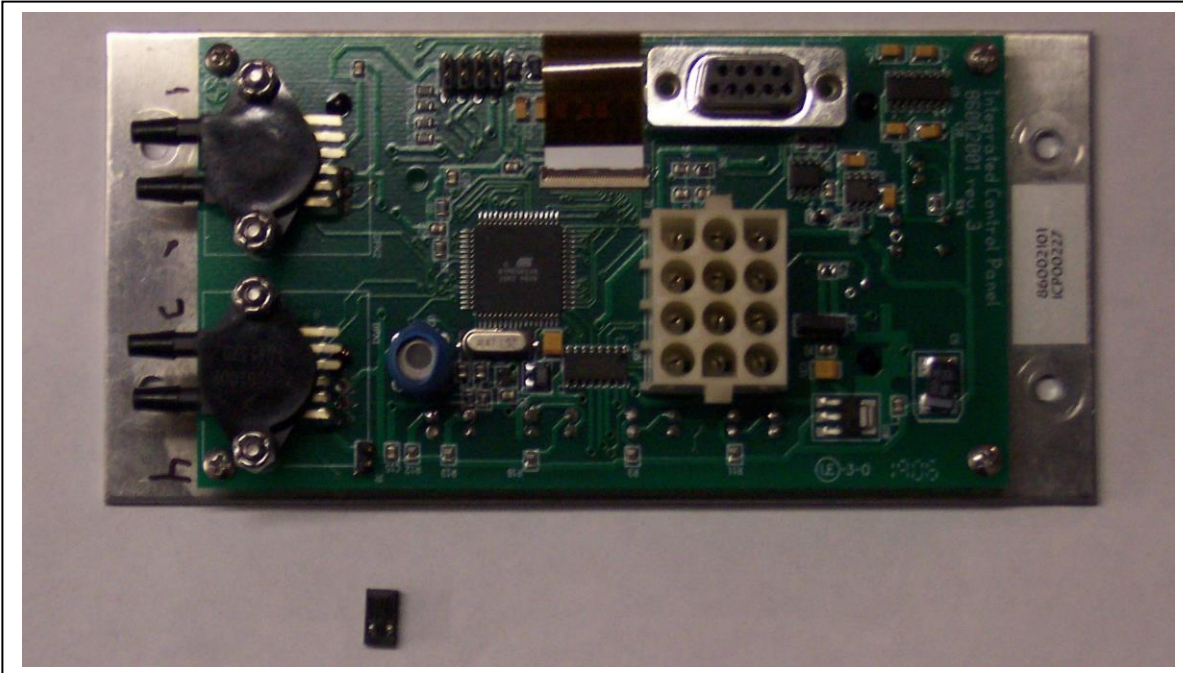
6. Reinstall control panel and screws
7. Apply power to start relay (see wiring diagram for your unit)

RELAY DE-ACTIVATION

1. Disconnect all power sources to GS3-500 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 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

REMOTE CONNECTION TO GS3-500 Air Filtration System

The GS3-500 system with digital display provides three 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:

<i>function</i>	<i>description</i>	<i>I/O</i>	<i>state</i>	<i>rating</i>
PRE	This output is energized when the pre-filter requires replacement.	output	N.O., relay closes on full filter 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.



GS3-500 Interface Package

1	BLACK	24 VOLT START OUT (NEG)
2	RED	24 VOLT START IN (POS)
3	BROWN	Gas/Odor 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 FILTER WARNING SIGNAL
9	WHITE	DRY CONTACT (BLOWER)
10	BLUE	DRY CONTACT (BLOWER)

