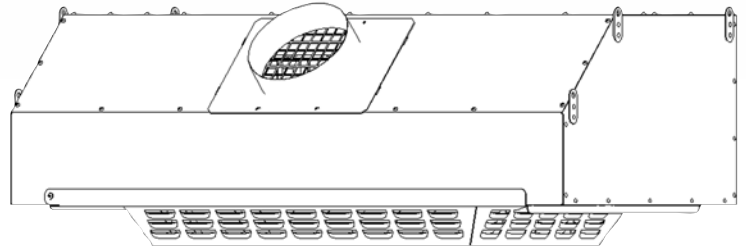


# AmericanAirFilter<sup>®</sup> HFS800C Ceiling Mounted HEPA Filtration System

## *Installation, Operation, and Maintenance Instructions*



### **Read and Save These Instructions!**

NOTE: 1. Read and understand all operating instructions before installing and using the HFS800C Ceiling Mounted HEPA Filtration System.

2. Save this manual for future reference.

This instruction manual provides important information on the installation and operation of the AAF International HFS800C Ceiling Mounted HEPA Filtration System. These instructions must be carefully followed in order to operate the unit safely and correctly. If there are any questions regarding the use or care of this unit, please contact AAF at 888.AAF.2003 for assistance.

AAF strongly recommends users of this product to follow the most recent guidelines and/or standards published by the Occupational Safety and Health Administration; Centers for Disease Control and Prevention; Environmental Protection Agency; American Society of Heating, Refrigerating and Air Conditioning Engineers, and all other federal, state, provincial, and local regulations.

AAF has published a [User Application Guide](#) (available upon request) to assist in the effective use of air filtration devices in health care facilities. Health care facility personnel are urged to read this document thoroughly and save it for reference purposes.

### **1.0 General Information**

The HFS800C unit incorporates HEPA (High Efficiency Particulate Air) filtration which provides the most effective mechanical filtration method available. In addition to providing HEPA filtration, the HFS800C is primarily used in a negative pressure and/or recirculation mode. A negative pressure condition is created in order to confine contaminated airborne particles. This condition exists when the static pressure inside the room containing the unit is lower relative to the pressure of the environment outside the room. The static pressure differential is created and maintained by continuously exhausting air out of a given room at a faster rate than air enters the room from all other sources. In the recirculation mode, all or part of the filtered air is exhausted back into the room containing the unit.

NOTE: The HFS800C is equipped with a touch pad control panel. Carefully read the sections of this instruction manual that describe how to operate the unit using the touch pad control panel.

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## 2.0 How To Determine the Required Number of Air Filtration Devices(AFD)

1. Calculate the total air volume (V) in cubic feet (ft<sup>3</sup>) within the enclosed containment area by multiplying the length (L) x the width (W) x the height (H), all in feet (V= L x W x H).
2. Determine the minimum number of air changes per hour (ACH) specification. When no ACH number is specified, most users target at least 6 ACH for construction areas. Building in a safety factor to compensate for filter loading, duct losses, reduced voltage, and other factors that can reduce actual installed airflow is a good practice. For example, if 6 ACH is the objective, you might design for 8 ACH.
3. Select an air filtration device (AFD) model and determine the peak airflow rating for that model in cubic feet per minute (CFM).
4. Determine the total number of AFD required using the following formula:  
Quantity = (V x Design ACH / AFD Rating x 60)
5. Always round up to the next whole number. For example, if the total number of AFD required is 2.13, 3 units are recommended, not 2.

### Example:

How many air filtration devices (each with 600 CFM rated airflow) would be required to provide 8 ACH (including a safety factor) in a 40' L x 24' W x 10' H containment area?

1. V = 40' x 24' x 10' = 9,600 ft<sup>3</sup>
2. Design ACH = 8
3. Quantity of AFD required = (9,600 ft<sup>3</sup> x 8 ACH) / 600 CFM x 60) = 76,800/36,000 = 2.13 = 3 units

## 3.0 Electrical and Safety Requirements

1. The HFS800C requires a minimum of 110 volts AC, 60Hz to operate properly; however, maximum airflow performance requires 120 volts AC, 60Hz. The unit requires a 15 ampere circuit that is free of other loads.
2. Check to ensure that any circuit to which the unit is connected is protected by a 15 ampere circuit breaker.
3. **The unit should be wired by a qualified and licensed electrician in accordance with local, NEC, and CEC electrical codes.**

CAUTION: As with any piece of electrical equipment, always make sure that the unit is turned "OFF" prior to hard-wiring the unit to its control panel or the building electrical system, or disconnecting it from its control panel or power source. Failure to do so will cause "arcing" and could result in personal injury, fire hazards, and/or damage to the unit. Do not disconnect the unit from its power source while the unit is operating.

WARNING: To reduce risk of electrical shock, do not expose the unit to water or rain. Do not touch the electrical outlet or wiring with wet hands or while standing on a wet or damp surface.

WARNING: Risk of electrical shock! Can cause injury or death! Turn unit "OFF" and disconnect power supply before replacing the HEPA filter and before cleaning or servicing the unit.

WARNING: The HFS800C is equipped with automatic restart motorized impellers that will restart without warning after a temporary power interruption or recovery from a thermal overload (over-heating) condition. Keep clear of the motorized impellers at all times to reduce the risk of injury.

WARNING: To reduce the risk of fire or electrical shock, do not use this unit with any solid state speed control device. Do not use in a cooking area.

WARNING - TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

- a) Use this unit only in the manner intended by AAF. If you have questions, contact AAF at 1-888-223-2003.
- b) Before wiring, installing, cleaning or servicing unit, switch power "OFF" at service panel and lock the service disconnecting means to prevent power from being switched "ON" accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

Always follow the instructions in a) and b) above before replacing the HEPA filter.

CAUTION: The HFS800C is designed for indoor use only.

CAUTION: For General Ventilating Use Only. Do Not Use To Exhaust Hazardous Or Explosive Materials And Vapors.

**WARNING:** AAF HEPA Filtration Systems are not intrinsically safe for use in hazardous environments. Always consult a certified industrial hygienist before using them. Do NOT use this equipment in any atmosphere that is or may be immediately dangerous to life or health (IDLH), combustible, flammable, explosive, oxygen deficient, and/or contains odors, vapors, gases or particulates that exceed permissible exposure levels. Such atmospheres may require the use of intrinsically safe equipment, specific engineering controls, and personal protective equipment in accordance with Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Canadian Standards Association (CSA), and other federal, state, provincial, and local regulations.

**WARNING:** This equipment is not classified as "intrinsically safe" and should not be used in the following hazardous locations as defined by the Underwriters Laboratories: Class I Division 1, Class I Division 2, Class I Zone 0, Class I Zone 1, Class I Zone 2, Class II Division 1, Class II Division 2, Class III Division 1, Class III Division 2. Refer to the UL web site: <http://www.ul.com/hazloc/define.htm>.

#### 4.0 Key Components - Refer to Figure A

##### Filters

- Prefilter - Pleated particulate filter that protects and extends the life of the more expensive HEPA filter. The prefilter for the HFS800C has an ASHRAE MERV 8 rating and is treated with an EPA registered antimicrobial agent.

An optional carbon prefilter (must be purchased separately) for capturing low concentrations of odors, vapors, gases, and volatile organic compounds, collectively known as OVG, is also available. Carbon filters reduce airborne OVG by chemically bonding the OVG molecules to the surface area of the carbon granules, via a process known as adsorption.

**NOTE:** To capture low concentrations of OVG, a carbon filter must be used. The particulate filters in the HFS800C do **not** remove odors, vapors, or gases, including volatile organic compounds.

- HEPA - The HEPA filter for the HFS800C has an efficiency rating of 99.99% in removing 0.3 micron size particles and incorporates a special gel seal to prevent leakage.

Motorized Impellers - pull air through a clean set of filters.

Circuit Breaker - Provides protection for the unit's electrical components. The circuit breaker is mounted to the front of the HFS800C cabinet.

Figure A. Model HFS800C Side View - Unit Suspended From Ceiling

Model HFS800C End View

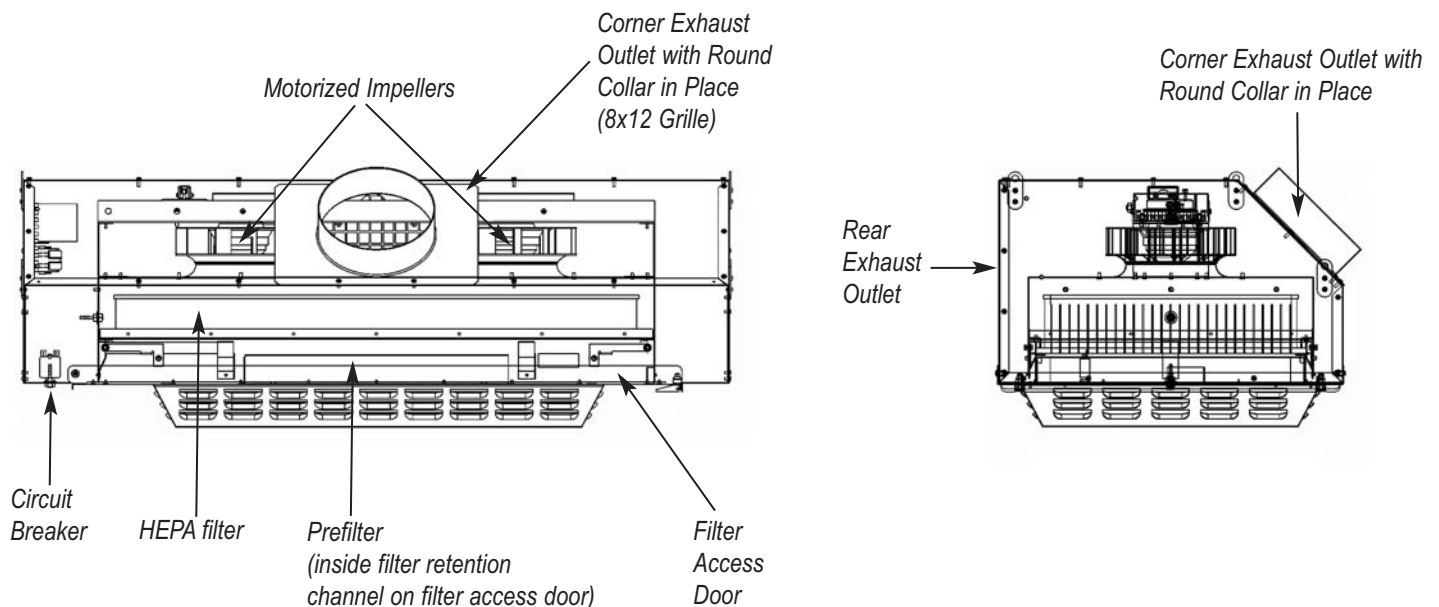
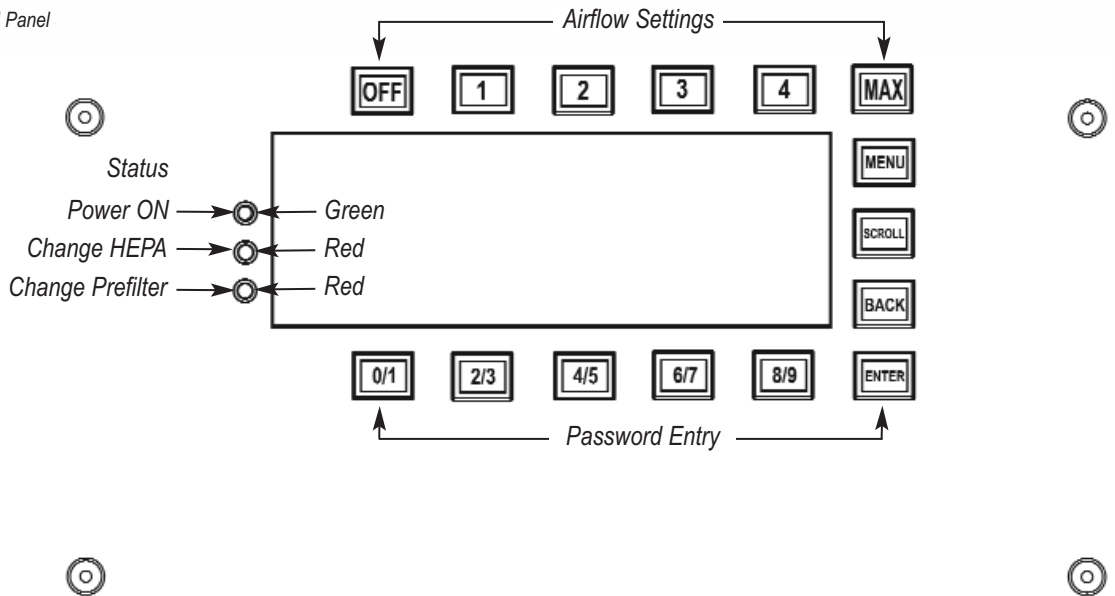


Figure B1: HFS800C Touch Pad Control Panel

**IMPORTANT:**

This device should be operated by qualified personnel only. Read and understand the operating manual prior to use. Password entry is required to turn this device on and off or to change the airflow settings.



**5.0 Touch Pad Control Panel for HFS800C - Refer to Figure B1**

The three LED lights on the left side of the control panel indicate the following:

**Top**

- Power ON - Green light that illuminates when unit is connected to electrical power supply.

**Middle**

- Change HEPA - Red light that will flash if there is excessive loading of the HEPA filter, indicating that HEPA filter change procedures should be followed.

**Bottom**

- Change Prefilter - Red light that will flash if there is excessive loading of the prefilter, indicating that prefilter change procedures should be followed.

The functions of the touch pad control panel keys are as follows:

**Speed Setting**



- Set Motor speed from #1 (lowest) to MAX (highest).
- Turn unit "OFF".

**Menu**



- Cycle through each menu item.

**Scroll**



- Move vertically among various menu options. When the SCROLL key is pressed, arrows will bracket the various menu options.

**Back**



- Back out of current screen and return to previous or main screen.

**Enter**



- Select the menu option bracketed by the scroll arrows.

**Password Entry Keys**



**NOTE:**

1. Unit is shipped with the password feature enabled.
2. The default password is: 9-1-1; however, this password can be changed.
3. Password is used to "lock-in" various control panel settings and prevents them from being tampered with or changed.
4. If the password is forgotten and/or lost, the factory preset password will have to be entered as follows: 3-0-0-2-4.
5. **After entering a password, always press ENTER.**



## 6.0 Before Installing the Units

Inspect the filters for any material or structural damage prior to use and replace any damaged filters before operating the unit.

An optional (not included with unit) round exhaust collar is available that accepts 8" diameter rigid or flexible ducting and fits over both the corner and rear exhaust outlet grills of the HFS800C. The collar slides in over the exhaust outlet grills and is secured by offset tabs and machine screws.

As with any air filtration system, airflow losses not attributable to the HEPA Filtration System will reduce the airflow of the system. The following recommendations can facilitate user installation and minimize airflow losses created by external static resistance.

1. Always use the minimum length of ducting possible with the fewest possible number of turns and bends.
2. Rigid metal ducting creates less turbulence and consequently less airflow loss than flexible ducting. Regardless of the type of ducting used, rigid "sweep-type", radiused connections should be used for all turns and bends.
3. If flexible ducting is used, it must be kept as taut as possible to avoid "pancaking" or flattening.
4. Louvers, dampers, and other external control devices should be sized to provide the equivalent open area to the cross sectional area of the exhaust duct.
5. When utilizing the HFS800C for negative pressure applications, airflow and air changes per hour are maximized by utilizing both the corner and rear exhaust outlets.
6. For negative pressure applications, the total volume of air supplied to the room must be lower than the volume of air exhausted by the air filtration unit. The minimum recommended differential is the greater of 100 CFM or 10%. Negative pressure levels should be continuously monitored.

NOTE: If the air supply to the room is not controlled, sufficient negative pressure might not be achieved.

## 7.0 Location and Modes of Operation

The HFS800C unit can be used in various modes of operation. The unit is designed to be suspended in a standard 2 foot x 4 foot drop ceiling grid. Refer to Figure C

The modes of operation are as follows:

1. Negative pressure - all of the filtered air is exhausted to an external environment, or re-circulated within the facility if allowed by federal, state, local, and facility ventilation codes. The other exhaust outlet can be sealed with the solid cover plate or used as a second exhaust outlet.
2. Negative pressure and recirculation - approximately 50% of the filtered air is exhausted through one outlet and the other 50% is re-circulated back into the room through the other outlet.
3. Full in room recirculation - all of the filtered air is re-circulated back into the room through both exhaust outlets.

## 8.0 Installation

NOTE: Access above the ceiling is required for installation and servicing.

NOTE: This ceiling-mounted unit is not recommended for contact with insulation materials. Make sure there is at least 6" of air space around the entire outside surface of the unit.

NOTE: Installation must be performed by qualified maintenance personnel only. All wiring must be done by a qualified and licensed electrician in accordance with local, NEC, and CEC electrical codes.

**WARNING:** Risk of electrical shock! Can cause serious injury or death! Make sure the unit is turned "OFF" and disconnected from power supply during the wiring and installation process. Read and follow all warnings and cautions in the "Electrical and Safety Requirements" section of this instruction manual before wiring and installing unit.

**WARNING:** Risk of electrical shock! Can cause serious injury or death! Turn the electrical power switches and circuit breakers for the HVAC system "OFF" before connecting the unit to any part of the HVAC system, including air ducts. Check to ensure that the unit is turned "OFF" and disconnected from electrical power source while being connected to HVAC system.

**CAUTION:** When installing the unit, always wear the proper personal protective equipment (particularly eye and hand protection) and follow safe work practices in accordance with federal, state, local, provincial and employer regulations. Be extremely careful when handling sheet metal during installation because serious injury could result from coming in contact with sharp edges.

**Refer to Figure C, and the various wiring diagrams and schematics in this instruction manual before hard-wiring or installing the HFS800C.**

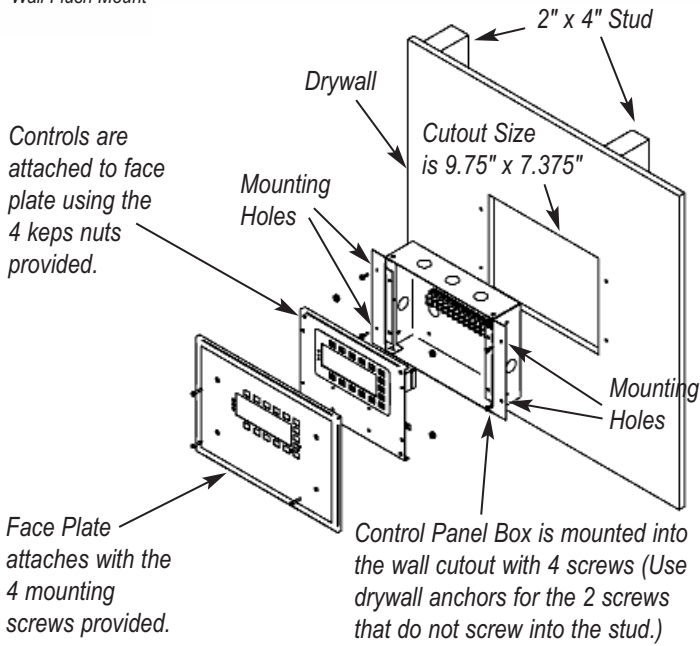
As stated previously; the HFS800C ceiling mounted unit fits in a 2 foot x 4 foot drop ceiling grid.

1. Remove the rear panel of the unit (held in place with Phillips head screws) to gain access to the unit's electrical wiring and terminal block. The terminal block is located inside the cabinet, adjacent to the knockouts.
2. The unit must be hard-wired to its control panel box and to the building electrical system. Knockouts are provided in the unit's cabinet for access to the wiring and terminal block. As a minimum requirement, 14 gauge wiring should be used to connect the unit to the facility's electrical system.

NOTE: Carefully read the various wiring diagrams and schematics in this instruction manual.

Figure B2: Control Panel Box Mounting

Wall Flush Mount



Wall Surface Mount

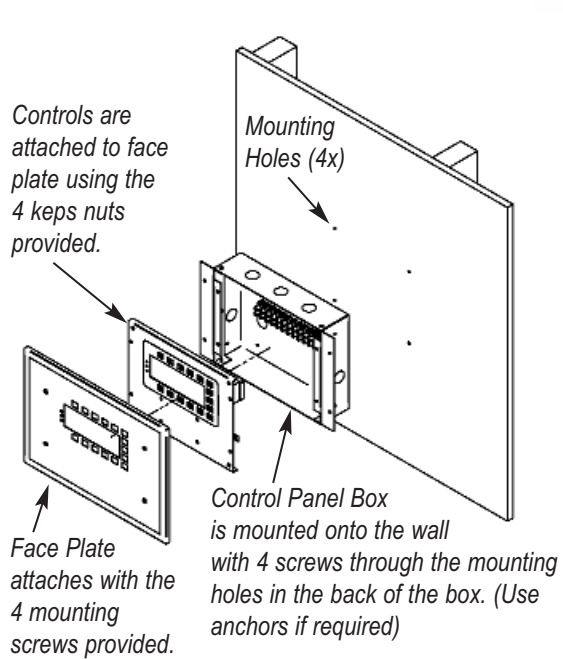
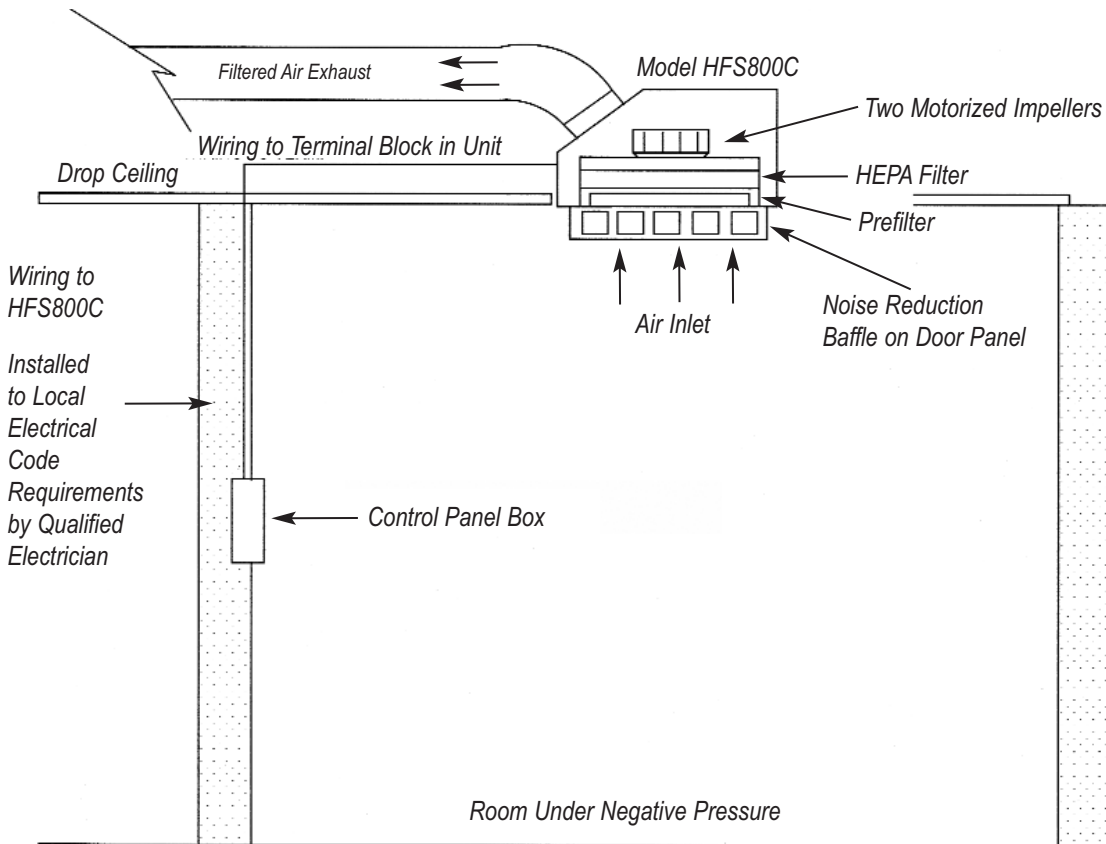


Figure C: HFS800C Installation Drawing



PLEASE NOTE: 14 gauge wire should be used for all field wiring. The wiring must be done by a qualified electrician in accordance with local electrical code as well as NEC and CEC code. At most, two wires can be wired into any one terminal in the terminal blocks. If more than two wires are required, the installing electrician should use a jumper with a wire nut to contain the extra wires.

Included with the HFS800C is 50 feet of Category 5e unshielded white riser cable. To ensure proper functioning of the touch pad control panel, only use the Category 5e cable to connect the control panel to the unit.

There are 8 wires in the cable (4 pairs). The colors of the 8 wires are as follows: (1) orange, (2) orange with white stripe, (3) green, (4) green with white stripe, (5) brown, (6) brown with white stripe, (7) blue, and (8) blue with white stripe.

There is a terminal block in the HFS800C unit and one in the control panel box. These terminal blocks must be connected using the Category 5e cable to join terminal 3 to 3, 4 to 4, 5 to 5 and finally 6 to 6.

In order to make these connections, proceed as follows:

- Strip the insulation back  $\frac{3}{4}$ " and twist the two wires of the same color pair (one wire with solid color and one with stripe of the same color) together so you end up with 4 pairs of wires.
- Fold the  $\frac{3}{4}$ " stripped end over so it is  $\frac{3}{8}$  inches long and put this section in the terminal block. The wires are small gauge, and folding it over provides enough wire to properly grip inside the terminal block.
  - Use the orange pair to wire terminal 3 at the control panel to 3 in the unit.
  - Use the green pair to wire terminal 4 at the control panel to 4 in the unit.
  - Use the brown pair to wire terminal 5 at the control panel to 5 in the unit.
  - Use the blue pair to wire terminal 6 at the control panel to 6 in the unit.

#### NOTES:

- Terminal 3 and terminal 4 monitor the pressure switch for the primary filter (sensor 1 on the circuit board).
- Terminal 5 and terminal 6 monitor the pressure switch for the HEPA filter (sensor 2 on the circuit board).

Upon completion of the hard-wiring, reassemble the rear panel to the unit; this must be done prior to mounting and operating the unit.

3. The HFS800C should be located as far as possible from the air supply to minimize "short circuiting" of air. Refer to the installation drawing. Suspend the unit from the support beams above the ceiling by connecting suitable wire or chain (that is in conformance with local building codes) to the suspension tabs that are attached to the unit. If permitted by building codes, turnbuckles and "S" hooks can be used to connect the wire or chain to the suspension tabs. The connection sequence would be as follows: suspension wire (or chain) from support beam to turnbuckle, turnbuckle to "S" hook and "S" hook to suspension tab on unit. The use of turnbuckles facilitates the "fine tuning" of the unit's position within a ceiling grid. In positioning the unit, be sure that the filter access door panel rests below the level of the drop ceiling (if applicable); this will facilitate filter changes.

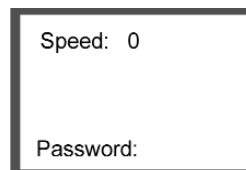
4. The remote control panel box should be securely mounted to a wall at a height of no less than 48" above the floor. **Refer to Figure B2 the CONTROL PANEL BOX MOUNTING drawing.**

**IMPORTANT NOTE: Do not operate the unit unless the prefilter and HEPA filter are installed, and the filter access door and panel are in place and closed.**

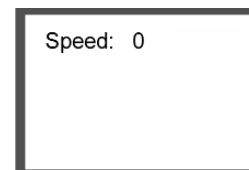
## 9.0 To Operate the HFS800C With Touch Pad Control Panel

### Menu Screen

- When the HFS800C is installed and connected to a 120 volt AC, 60Hz, 15 amp electrical power supply, the green LED light illuminates, the screen displays "AAF International HFS" for a few seconds, then one of the following screens displays:



Screen display if password enabled.



Screen display if password disabled.

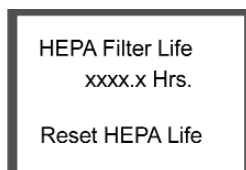
- Press the MENU key to cycle through the following menu items: "HEPA Filter Life" and "Total Unit Hours".
- Enter the default password, 9-1-1, and press ENTER to change the settings of the menu items.

NOTE: After the password has been entered, the electronic controls will unlock and the settings of the various menu items can be changed. If no key has been pressed within 10 seconds after the password is entered, the initial screen will display and the electronic controls will lock. At this point, the password must be re-entered.

- To Set the Speed:

1. Enter the password if prompted. See screen above entitled: "Screen display if password enabled".
2. Press desired speed setting key.

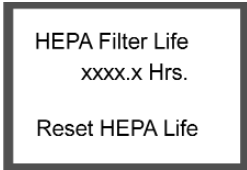
- HEPA filter hours - The units display the remaining service life of the HEPA filter. To access this information, press the MENU key and the screen will display:



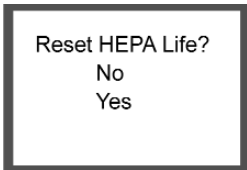
- To reset HEPA filter life:

NOTE: This should only be done when the HEPA filter has been changed.

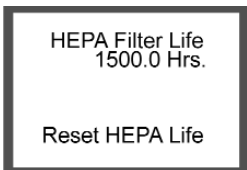
1. Enter the password if prompted.
2. Press the MENU key until the following screen displays:



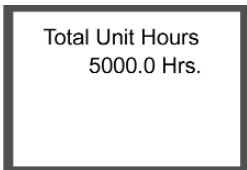
- Press SCROLL key until the arrows bracket "Reset HEPA Life".
- Press ENTER and the screen will display:



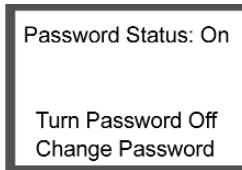
- Scroll to the desired selection and press ENTER. When the selection is "Yes", the screen will display "HEPA Life Reset" for 2 seconds, then the following confirmation screen will display:



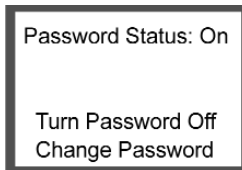
- To access the "Total Unit Hours" screen, press the MENU key twice and the screen will display:



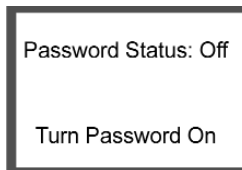
- The Password feature has 2 functions (see screen below):



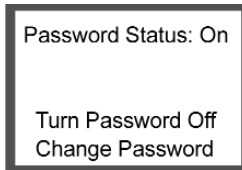
1. Enabling and disabling the password feature. As stated previously, the unit is shipped with the password feature enabled.
  - a. To disable the password feature:
    - i. Enter the password from the main menu.
    - ii. Press MENU key until the following screen displays:



- iii. Scroll to: "Turn Password Off" and press ENTER. A screen will briefly display "Password is Off", then the screen will display:

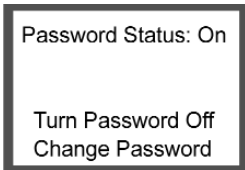


- b. To enable the password feature:
  - i. Press MENU key until the screen in (a. iii above) displays.
  - ii. Scroll to "Turn Password On" and press ENTER. A screen will briefly display "Password is On", then the screen will display:

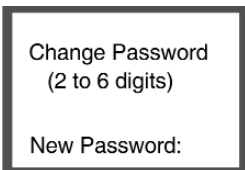


2. Change the password:

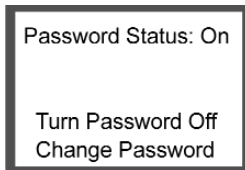
- a. Enter the password from the main menu.
- b. Press MENU key until the following screen displays:



- c. Scroll to “Change Password”, press ENTER and the following screen will display:



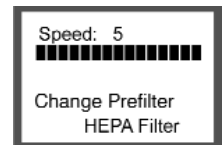
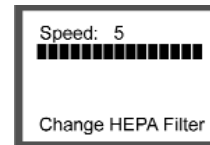
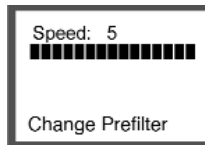
- d. Enter the new password. A screen will briefly display “Password Changed”, then the screen will display:



- Alarm Conditions - The HFS800C is equipped with filter change indicators. When either or both filters become loaded, an alarm condition is created. The alarm condition is indicated by an audible beep, flashing red LED light(s), and a screen display. Refer to the section entitled Touch Pad Control Panel for HFS800C for specifics regarding the function of each LED light.

NOTE: The audible alarm can be muted by pressing any key; however, the red LED light(s) will continue to flash until the indicated filter is changed.

The screen will indicate the cause of the alarm condition. When an alarm condition is present, one of the following screens will display:



1. Press the BACK key (only if not in the main screen).
2. Enter the password if prompted.
3. Press the OFF key to turn the unit “Off”.
4. Refer to the section of this instruction manual entitled: “Filter Replacement” and change the filter(s).

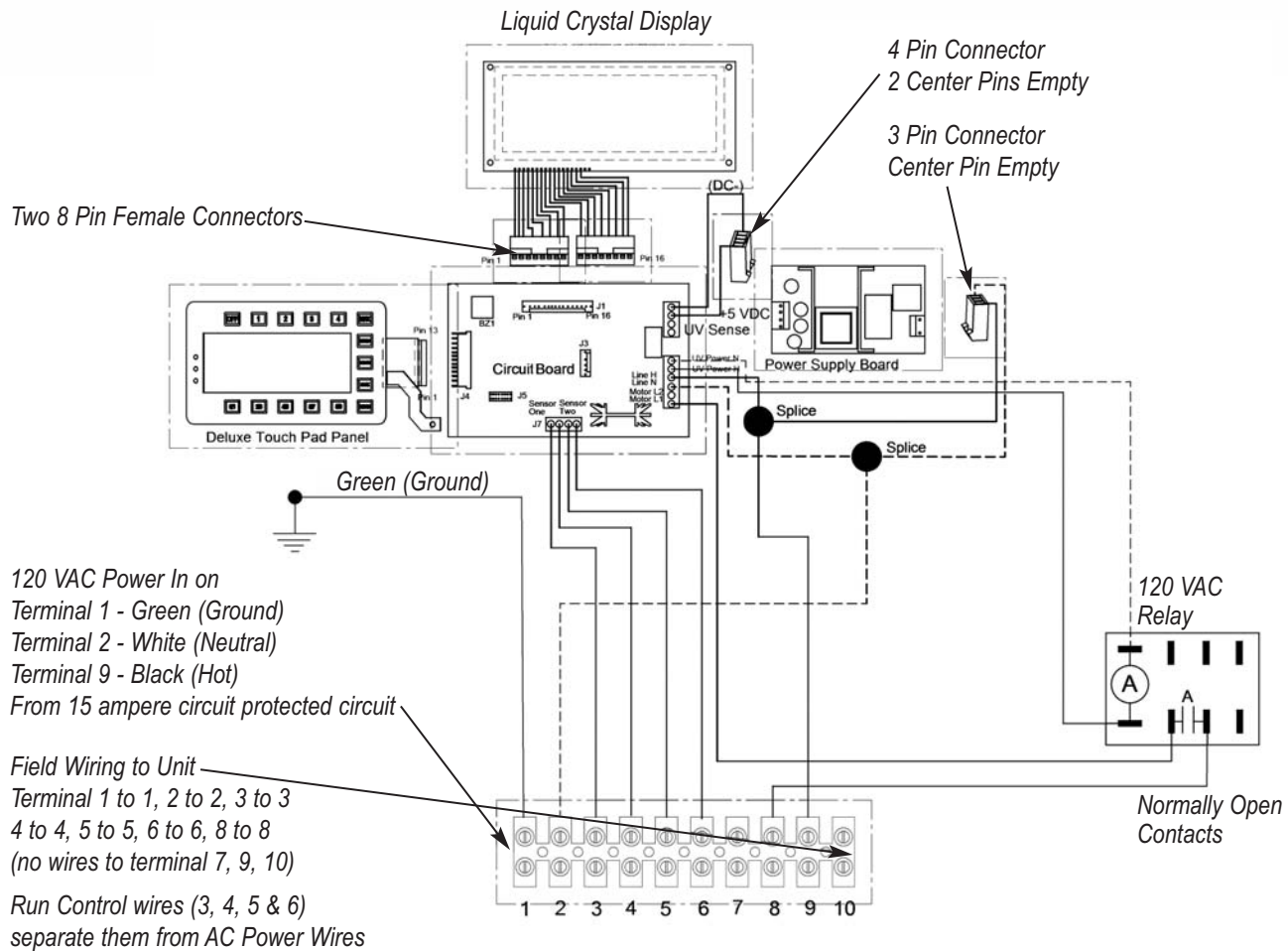
NOTE: The backlight for the control panel screen will remain ON for 5 minutes after the unit is connected to the power supply, then shuts OFF. To reactivate the screen, press “ENTER” and the backlight will turn ON for another 5 minute period.

**NOTE: It is recommended that the unit be operated at “MAX” speed whenever possible to maximize filtration, air changes, and overall operation conditions.**

The HFS800C has an automatic restart feature. If there is a temporary loss of electrical power, the unit will automatically restart as soon as power is restored.

If the HFS800C is used to create and maintain a negative pressure condition, the pressure differential (between the room containing the unit and the environment outside the room) should be monitored with a calibrated instrument as per OSHA/CDC requirements. The AAF HCRPM-3N2 is recommended for room pressure monitoring.

## HFS800C Wiring Diagram - Control Panel



PLEASE NOTE: 14 gauge wire should be used for all field wiring. The wiring must be done by a qualified electrician in accordance with local electrical code as well as NEC and CEC code. At most, two wires can be wired into any one terminal in the terminal blocks. If more than two wires are required, the installing electrician should use a jumper with a wire nut to contain the extra wire.

PLEASE NOTE: To ensure proper functioning of the touch pad control panel, only use the Category 5e unshielded white riser cable supplied with this unit. There are 8 wires in the cable (4 pairs). The colors of the 8 wires are: (1) orange, (2) orange with white stripe, (3) green, (4) green with white stripe, (5) brown, (6) brown with white stripe, (7) blue, and (8) blue with white stripe.

Terminal blocks in the HFS800C unit and in the control panel box must be connected using the Category 5e cable to join terminal 3 to 3, 4 to 4, 5 to 5 and 6 to 6.

To make these connections:

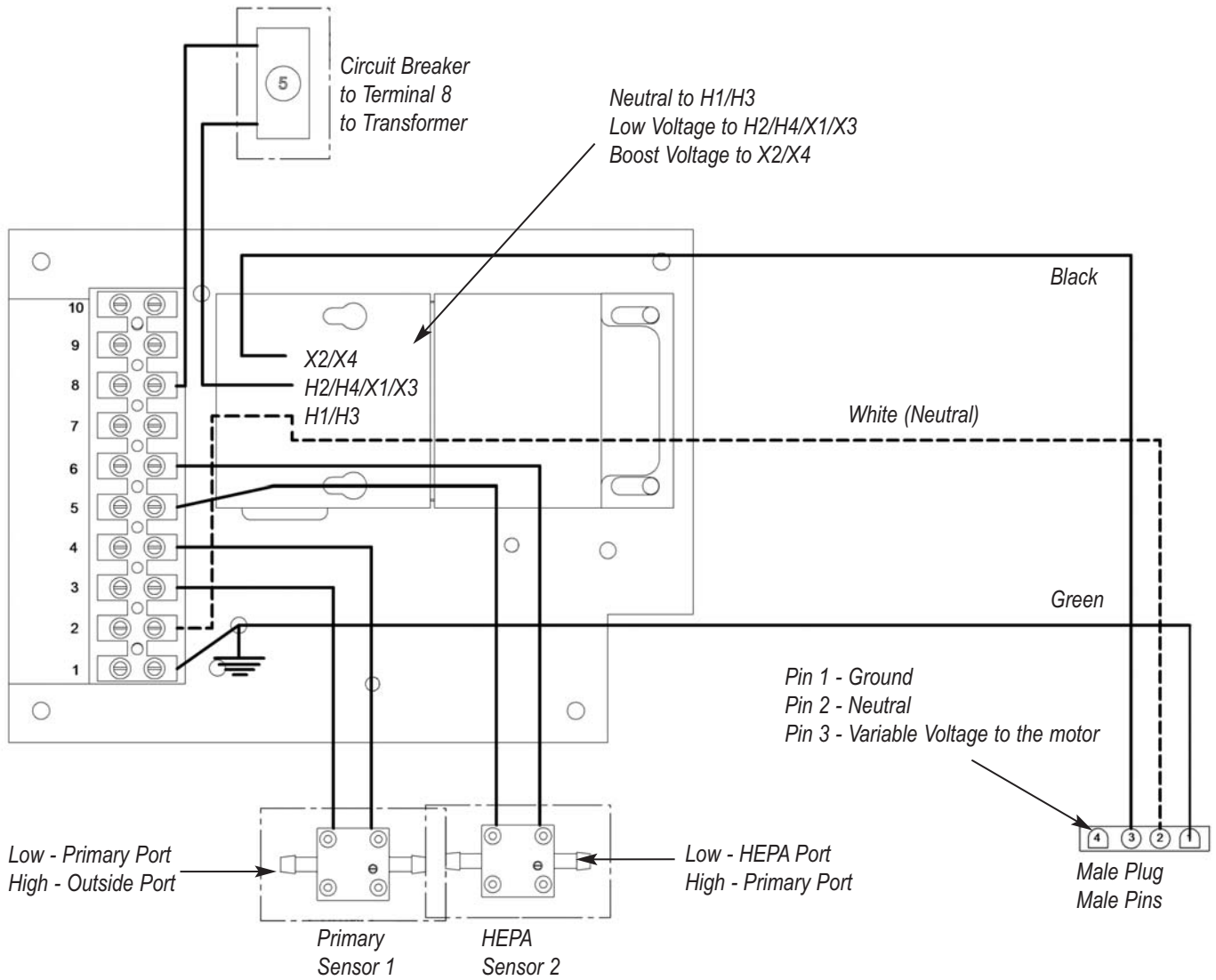
- Strip the insulation back  $\frac{3}{4}$ " and twist the two wires of the same color pair (one wire with solid color and one with stripe of the same color) together so you end up with 4 pairs of wires.
- Fold the  $\frac{3}{4}$ " stripped end over so it is  $\frac{3}{8}$  inches long and put this section in the terminal block. The wires are small gauge, and folding it over provides enough wire to properly grip inside the terminal block.

- Use the orange pair to wire terminal 3 at the panel to 3 in the unit.
- Use the green pair to wire terminal 4 at the panel to 4 in the unit.
- Use the brown pair to wire terminal 5 at the panel to 5 in the unit.
- Use the blue pair to wire terminal 6 at the panel to 6 in the unit.

NOTES:

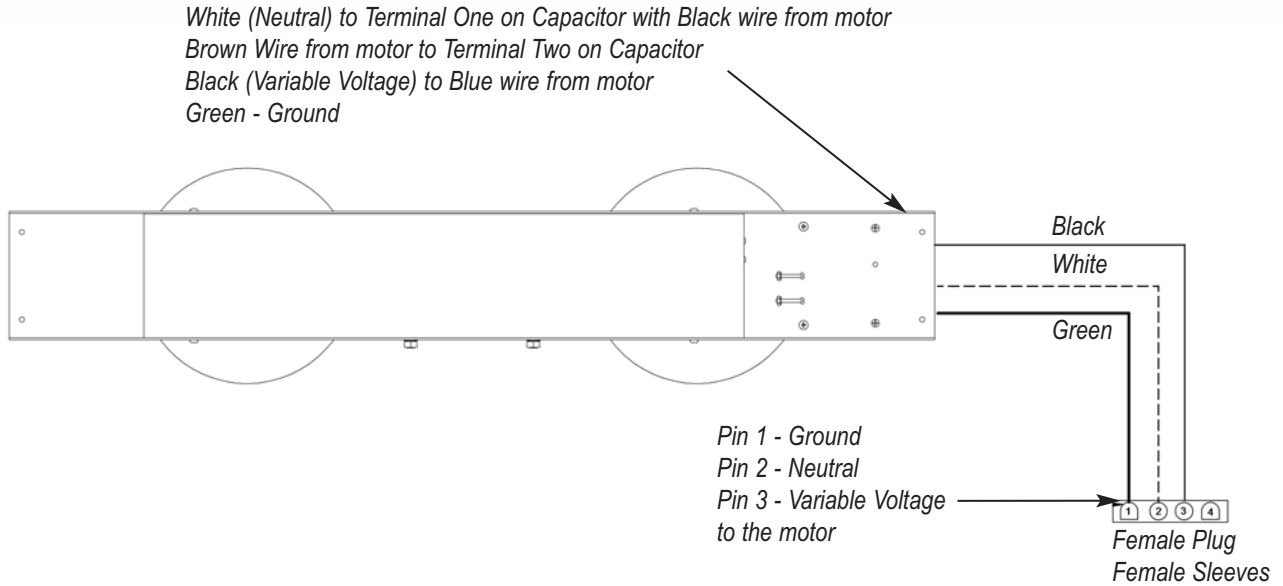
1. Terminal 3 and terminal 4 monitor the pressure switch for the primary filter (sensor 1 on the circuit board).
2. Terminal 5 and terminal 6 monitor the pressure switch for the HEPA filter (sensor 2 on the circuit board).

## HFS800C Wiring Diagram - Transformer Bracket



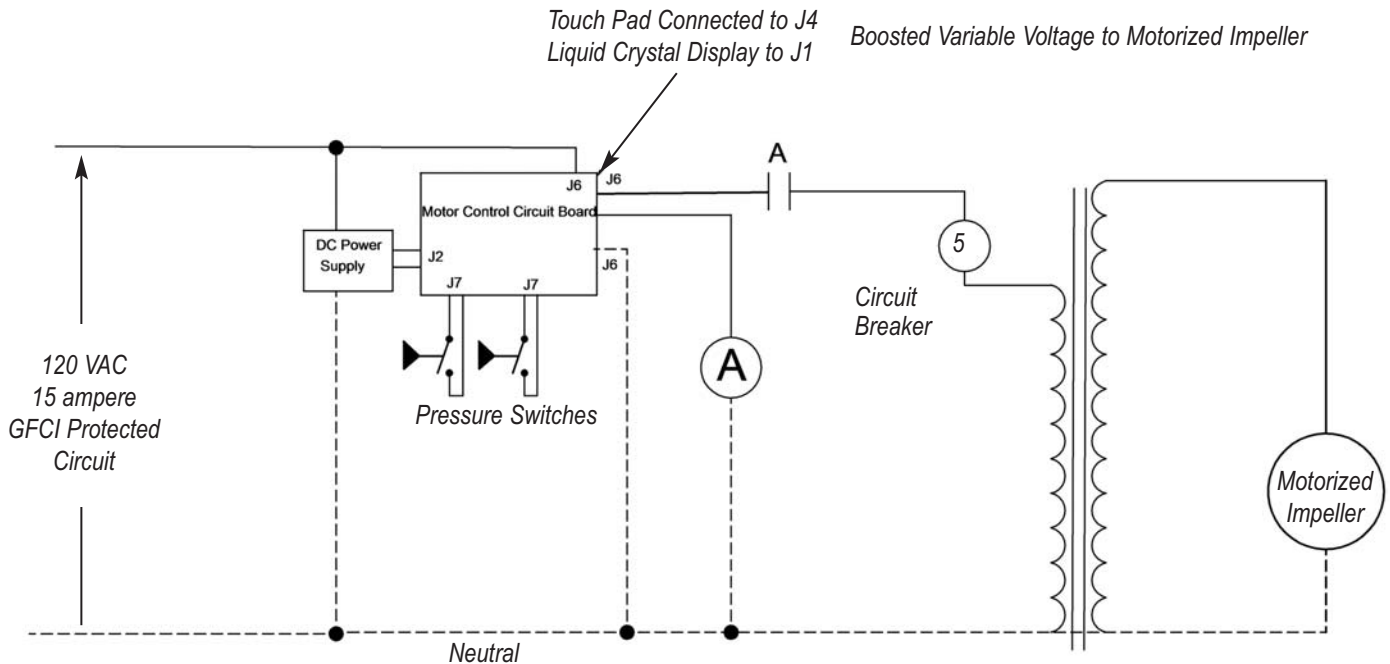
PLEASE NOTE: 14 gauge wire should be used for all field wiring. The wiring must be done by a qualified electrician in accordance with local electrical code as well as NEC and CEC code. At most, two wires can be wired into any one terminal in the terminal blocks. If more than two wires are required, the installing electrician should use a jumper with a wire nut to contain the extra wire.

## HFS800C Wiring Diagram - Motorized Impellers



PLEASE NOTE: 14 gauge wire should be used for all field wiring. The wiring must be done by a qualified electrician in accordance with local electrical code as well as NEC and CEC code. At most, two wires can be wired into any one terminal in the terminal blocks. If more than two wires are required, the installing electrician should use a jumper with a wire nut to contain the extra wire.

## HFS800C Wiring Schematic



## 10.0 Filter Loading Indicators

When the red light(s) on the HFS800C touch pad control panel flash, this indicates one or more of the following: (1) the prefilter is loaded and should be replaced, (2) the inlet is obstructed, (3) the HEPA filter is loaded and should be replaced. The screen will display which filter(s) need to be replaced.

## 11.0 Filter Replacement - Refer to Figure A

**NOTE: Personnel responsible for changing filters, servicing units, or relocating units within the facility are urged to wear the proper personal protective equipment and follow safe work practices in accordance with federal, state, provincial, and employer regulations.**

**NOTE: Filters being replaced must be disposed of in accordance with federal, state, provincial, local, and facility regulations.**

The size and concentration of airborne contaminants, temperature and humidity conditions, and duration of use determine how often filters need replacement.

The method of determining when to replace the optional carbon filter is somewhat subjective. As the odor, vapor, and/or gas filtration capacity decreases, the user will begin to sense a slight odor or taste of the contaminant, indicating that the filter should be replaced.

**NOTE:** The filters are not reusable. Do not attempt to clean and reuse them.

**NOTE:** If an optional carbon filter is being used, be sure to remove it from its polybag before installing it in a unit. Most carbon filters are packaged in polybags to preserve the integrity of the carbon granules.

**CAUTION:** AAF HEPA Filtration Systems are designed to meet or exceed standards for high efficiency air filtration equipment. Use only AAF parts, including replacement filters. Use of non-AAF parts and filters voids the product warranty and all performance claims.

**WARNING:** To reduce the risk of fire, electrical shock or personal injury, always turn the unit "OFF" and disconnect the power supply before replacing the filters and before cleaning or servicing the unit.

**WARNING:** Before replacing the HEPA filter and before wiring, installing, servicing, or cleaning the unit, switch power "OFF" at service panel and lock the service disconnecting means to prevent power from being switched "ON" accidentally. When service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

## 12.0 Filter Change Procedures

To Change the Prefilter in the HFS800C:

1. Turn the unit "OFF". Use the 1/4" hex key (provided with unit) to loosen the cap screw on the door panel. Pull up on the two door latches and let the hinged door panel swing down until it is hanging in the vertical position.
2. Remove the prefilter from the filter retention channel mounted on the inside of the door. The filter slides out toward the top of the door.
3. Install a new prefilter and check to ensure that it is properly seated at the bottom of the retention channel.
4. Close the door panel and lock it in position by pushing down on the latches. Tighten the cap screw with the hex key.

To Change the HEPA filter in the HFS800C:

1. Turn the unit "OFF" and disconnect it from power supply. Read and follow all warnings and cautions in the sections of this instruction manual entitled "Electrical and Safety Requirements" and "Filter Replacement" before attempting to change the HEPA filter in the HFS800C.
2. Loosen the cap screw on the door panel, pull up on the latches, and let the door panel swing down until it is in the vertical position.
3. The HEPA filter is held in place by spring-loaded swivel brackets. Grasp two of the spring-loaded knobs located at one end of the unit and slide the brackets away from the housing until they disengage, and rotate them away from the filter toward the outside of the unit. The HEPA filter will slowly drop down from the mounting frame and will be retained by the tabs on the swivel brackets.
4. Disengage the two swivel brackets at the opposite end of the unit and rotate them completely away from the filter until they touch the unit housing.
5. The HEPA filter has a gel seal and fits snugly against the mounting frame. When removing the filter there will be some resistance felt while pulling it away from the mounting frame. Remove the HEPA filter and dispose of it.
6. Orient the new HEPA filter so that the gel seal surface is facing the inside of the unit. Position the filter against the filter guides attached to the unit housing and slide it inward until it is flush against the mounting frame.
7. Rotate the swivel filter mounting brackets back into their locked position, making sure that each knob snaps securely into the unit housing.
8. Close the door panel and lock it in position by pushing down on the latches. Tighten the cap screw with the hex key.

### 13.0 Specifications

Feature	HFS800C
Net weight with filters	HFS800C = 71 lbs. control panel = 5 lbs.
Shipping weight	HFS800C = 86 lbs. control panel = 7 lbs.
Dimensions Width x Depth x Height	HFS800C = 23.5"W x 16"D x 47"H control panel = 7.187"W x 2.5"D x 9.625"H
Power supply requirements	120 volts AC, 60 Hz, 15 amp circuit. Unit draws 3.0 amps.
Motorized impeller	2 each, 125 watts, variable speed, with thermal overload protection, automatic reset, 60 hz., single phase.
Automatic restart - unit will automatically restart itself after temporary power interruption	Yes
Cabinet material	.050" powder coated aluminum
Cabinet seams	Assembled with solid rivets and sealed.
Noise level	53-59 dBA
Control panel	Touch pad style with LED lights and liquid crystal display (LCD) screen.
Sound baffle/Prefilter shield	Yes
Circuit breaker	5 amp
Filter loading indicator	LED lights and LCD screen.
Power indicator	Yes
Motor speed	5 motor speed settings.
Connection to power supply	Unit is designed to be hard-wired to a wall-mounted control panel box and building electrical system.
Prefilter	ASHRAE MERV 8 rated pleated filter. Treated with EPA registered antimicrobial agent - p/n 175-02-17E17G
HEPA filter	Individually tested and certified to a minimum efficiency of 99.99% against a 0.3 micron challenge aerosol; anodized aluminum frame; gel seal - p/n 577-571-002.
Location of exhaust outlet	Corner / rear panels of unit.
Accessories included with unit	One solid exhaust cover plate.

NOTE: Specifications subject to change without notice.

## 14.0 Airflow Ratings

	Speed 1	Speed 2	Speed 3	Speed 4	Maximum
HFS800C (8"x12" rectangular exhaust)	250 CFM	375 CFM	500 CFM	625 CFM	750 CFM
HFS800C (8" diameter round exhaust)	200 CFM	300 CFM	400 CFM	500 CFM	600 CFM

NOTE: Airflow ratings estimates are based on factory and independent testing @ 120 VAC with an air straightener and a traverse of readings taken with a computing vane-anemometer. Actual results may vary for various reasons, including motor, blower and HEPA filter tolerances. Factors such as filter loading, reduced voltage to the motor, and inlet and outlet ducting will reduce airflow. Use these ratings as a general guideline only as results can vary with each installation.

## 15.0 Troubleshooting Guide

Problem	Possible Cause	Solution
Unit won't start when it is turned "ON."	Electrical wiring connections.	Check condition of wiring and cabling. Check all electrical connections to ensure they are in accordance with wiring diagrams and schematics.
	Tripped circuit breaker.	Reset building breaker. Reset 5 amp breaker on unit.
	Thermal overload on motorized impeller(s) has tripped.	Turn unit "OFF," wait 20-30 minutes and restart.
Filter loading indicators flashing.	Loaded filters.	Refer to Filter Change Procedures.
	Optional carbon filter not removed from polybag.	Remove from polybag.

NOTE: If unit does not start or malfunctions after carefully following the Troubleshooting Guide, call AAF at 1-888-223-2003.

# AmericanAirFilter®

## HFS800C Ceiling Mounted HEPA Filtration System

### Installation, Operation, and Maintenance Instructions

#### 16.0 Component Replacement and Care of the Unit

**WARNING:** To reduce the risk of fire, electrical shock, or personal injury, always turn the unit "OFF" and disconnect it from the power supply before removing the control panel, replacing the filters and before cleaning or servicing the unit. The HFS800C is equipped with automatic restart motorized impellers that will restart without warning after a temporary power interruption or recovery from a thermal overload (over-heating) condition. Keep clear of motorized impellers at all times to reduce the risk of injury.

Occasionally a defective component will cause the unit to operate improperly or not at all. Any electrical component can fail. Refer to the Wiring Diagrams and Electrical Schematic to diagnose the failure of any component. Diagnostics should only be performed by a technician qualified to service electrical equipment.

The unit is powder coated and should be cleaned with a damp cloth or a water-based cleaner/sanitizer. Do not use harsh chemicals, solvents or detergents (particularly on the control panel cover) to clean the unit.

**WARNING:** Keep electrical components dry as their exposure to liquids poses a safety hazard and can damage components.

#### 17.0 Certification of HEPA Filtration System

The AAF HFS800C has been tested by Intertek Testing Services (ITS) and is ETL listed.

ITS is accredited by the U.S. Occupational Safety and Health Administration (OSHA) as a Nationally Recognized Testing Laboratory (NRTL).

#### 18.0 Limited Warranty

AAF International HEPA Filtration Systems are manufactured by Abatement Technologies, Inc. and warranted by AAF to the original user, against defects in materials and workmanship for a period of 2 years after the date of purchase. This warranty does not guarantee a useful life of the filters. Our only obligation shall be, at our option, to repair or replace the defective component(s) or make a suitable adjustment for each defect(s) upon timely notification thereof, provided the unit has been used, maintained and handled in accordance with these Operating Instructions.

#### 19.0 Limitation of Liability

Except as provided above, AAF International shall not be liable for any loss or damage, whether direct, indirect, incidental, special or consequential, arising out of the sale, use or misuse of AmericanAirFilter products or the user's inability to use such products. The remedies set forth herein are exclusive.

For warranty information and assistance contact AAF International's Customer Service Department at 1-888-223-2003.

**AAF**<sup>®</sup> 10300 Ormsby Park Place Suite 600  
Louisville, Kentucky 40223-6169  
**INTERNATIONAL**  
www.aafintl.com  
Customer Service 888.AAF.2003  
Fax 888.223.6500



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ISO Certified Firm

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