



# INSTALLATION MANUAL



## FRESH AIR DAMPER

Model: FAD-4, FAD-5, FAD-6, FAD-7, FAD-8, FAD-9, FAD-10, & FAD-12

### READ THESE INSTRUCTIONS CAREFULLY AND COMPLETELY BEFORE PROCEEDING WITH THE INSTALLATION

This device **MUST** be installed by a qualified agency in accordance with the manufacturer's installation instructions. The definition of a qualified agency is: any individual, firm, corporation or company which either in person or through a representative is engaged in, and is responsible for, the installation and operation of HVAC appliances, who is experienced in such work, familiar with all the precautions required, and has complied with all the requirements of the authority having jurisdiction. Please retain these instructions after installation.

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The Fresh Air Damper you have purchased has been designed to be simple to install, operate and maintain.  
**Read this manual before you install the damper.**

This product should be installed according to local and national codes and standards.



### Parts included in Fresh Air Damper package:

1. FAD Damper
2. 3-Wire Harness with Modular Damper Connector
3. Installation Manual

### Options and additional parts recommended:

1. Fresh Air Ventilation Control (FAVC)
2. Fresh Command Multifamily Control (FCMC)

**FRESH AIR DAMPER - FAD**

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# CAUTION

- 1. Sharp edges may cause serious injury from cuts. Use care when cutting openings and handling duct work.
- 2. Install dampers in return duct only, and as close to the heating and cooling equipment as possible.
- 3. Do not force damper blades closed by hand, as damage may occur.

# SPECIFICATIONS

| FRESH AIR DAMPER MODELS |                                |         |      |       |                            |                                |                                  |                               |                                |                 |
|-------------------------|--------------------------------|---------|------|-------|----------------------------|--------------------------------|----------------------------------|-------------------------------|--------------------------------|-----------------|
| MODEL                   | DUCT OR PIPE DIAMETER (INCHES) | VOLTAGE | AMPS | WATTS | DIMENSIONS                 |                                |                                  |                               |                                |                 |
|                         |                                |         |      |       | A<br>TUBE SIZE<br>(INCHES) | B<br>LENGTH<br>(INCHES)        | C<br>TOTAL<br>HEIGHT<br>(INCHES) | D<br>(INCHES)                 | E<br>(INCHES)                  | WEIGHT<br>(LBS) |
| FAD-4                   | 4"                             | 24      | 0.07 | 3     | 4                          | 6                              | 9 <sup>5</sup> / <sub>8</sub>    | <sup>5</sup> / <sub>16</sub>  | 5                              | 2.5             |
| FAD-5                   | 5"                             |         |      |       | 5                          | 6                              | 10 <sup>5</sup> / <sub>8</sub>   | <sup>5</sup> / <sub>16</sub>  | 5                              | 2.70            |
| FAD-6                   | 6"                             |         |      |       | 6                          | 6 <sup>1</sup> / <sub>2</sub>  | 11 <sup>5</sup> / <sub>8</sub>   | 1 <sup>1</sup> / <sub>8</sub> | 5 <sup>1</sup> / <sub>2</sub>  | 3.10            |
| FAD-7                   | 7"                             |         |      |       | 7                          | 7 <sup>1</sup> / <sub>16</sub> | 12 <sup>5</sup> / <sub>8</sub>   | 1 <sup>3</sup> / <sub>8</sub> | 6 <sup>1</sup> / <sub>16</sub> | 3.55            |
| FAD-8                   | 8"                             |         |      |       | 8                          | 8 <sup>1</sup> / <sub>16</sub> | 13 <sup>5</sup> / <sub>8</sub>   | 1 <sup>3</sup> / <sub>8</sub> | 7 <sup>1</sup> / <sub>16</sub> | 4.40            |
| FAD-9                   | 9"                             |         |      |       | 9                          | 10 <sup>1</sup> / <sub>8</sub> | 14 <sup>5</sup> / <sub>8</sub>   | 2 <sup>3</sup> / <sub>8</sub> | 9 <sup>1</sup> / <sub>8</sub>  | 5.58            |
| FAD-10                  | 10"                            |         |      |       | 10                         | 12 <sup>1</sup> / <sub>8</sub> | 15 <sup>5</sup> / <sub>8</sub>   | 3 <sup>3</sup> / <sub>8</sub> | 11 <sup>1</sup> / <sub>8</sub> | 6.95            |
| FAD-12                  | 12"                            |         |      |       | 12                         | 12 <sup>1</sup> / <sub>8</sub> | 17 <sup>5</sup> / <sub>8</sub>   | 3 <sup>3</sup> / <sub>8</sub> | 11 <sup>1</sup> / <sub>8</sub> | 9               |

# DIMENSIONAL DATA

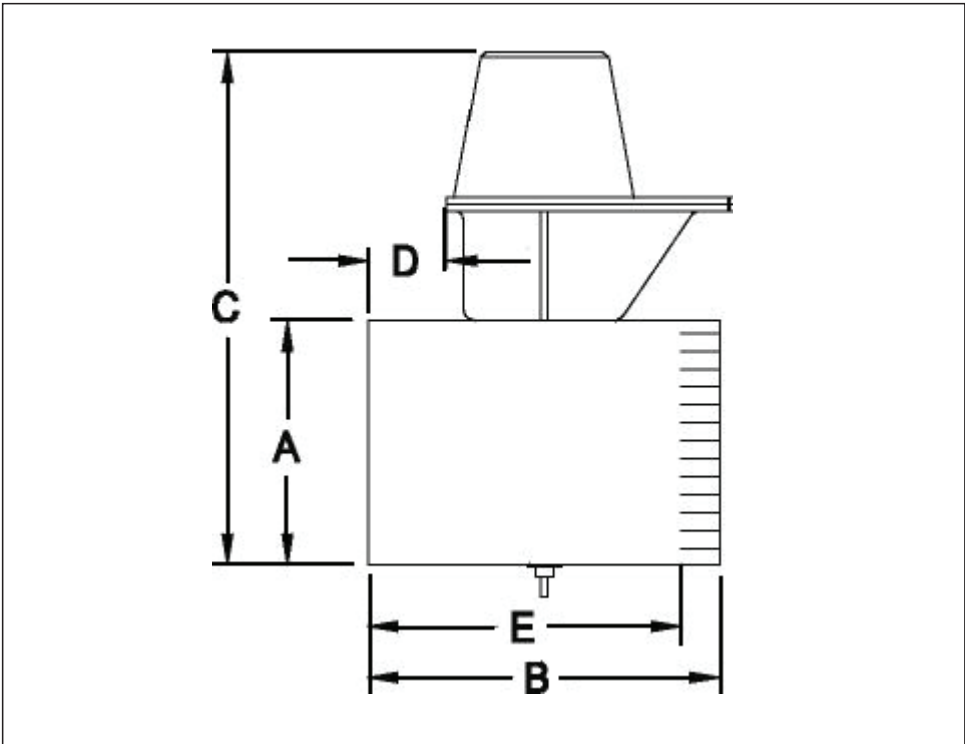


Figure 1: FAD Dimensions

## INSTALLATION



1. Turn off the power to the furnace or air handler before starting installation. Be sure all power sources are disconnected, since there may be more than one. This is required to reduce the risk of electric shock.
2. Select a location in the fresh air inlet duct where the damper will be installed. For best efficiency, keep the inlet duct as short as possible and install the damper close to the controller.
3. Install the damper in the duct opening. The damper can be mounted in any position, but when mounted horizontally, it is recommended to place the motor at the 3 or 9 o'clock position. Air may flow through the damper in either direction, although the recommended orientation is with the crimped end serving as the outlet.
4. Fasten the damper carefully into the duct system. Avoid distorting the damper housing during installation. Make sure the assembly is properly supported so the damper remains aligned and operates freely.
5. Wire the Fresh Air Damper to the ventilation control (FAVC or FCMC) or approved 24VAC control circuit. The FAD is designed for 24 volts, 0.07 amps, and approximately 3 watts.
6. Confirm that all wiring follows local and national electrical codes. Improper wiring or installation may result in personal injury or property damage.
7. After installation and system startup, set the damper power switch to the UP or AUTOMATIC Position. (See Figure 2)
8. Restore power and verify that the damper opens and closes properly during operation. Check that the duct connection is secure, the motor position is correct, and the damper is not obstructed.



Figure 2: Damper Power Switch

## OPERATION

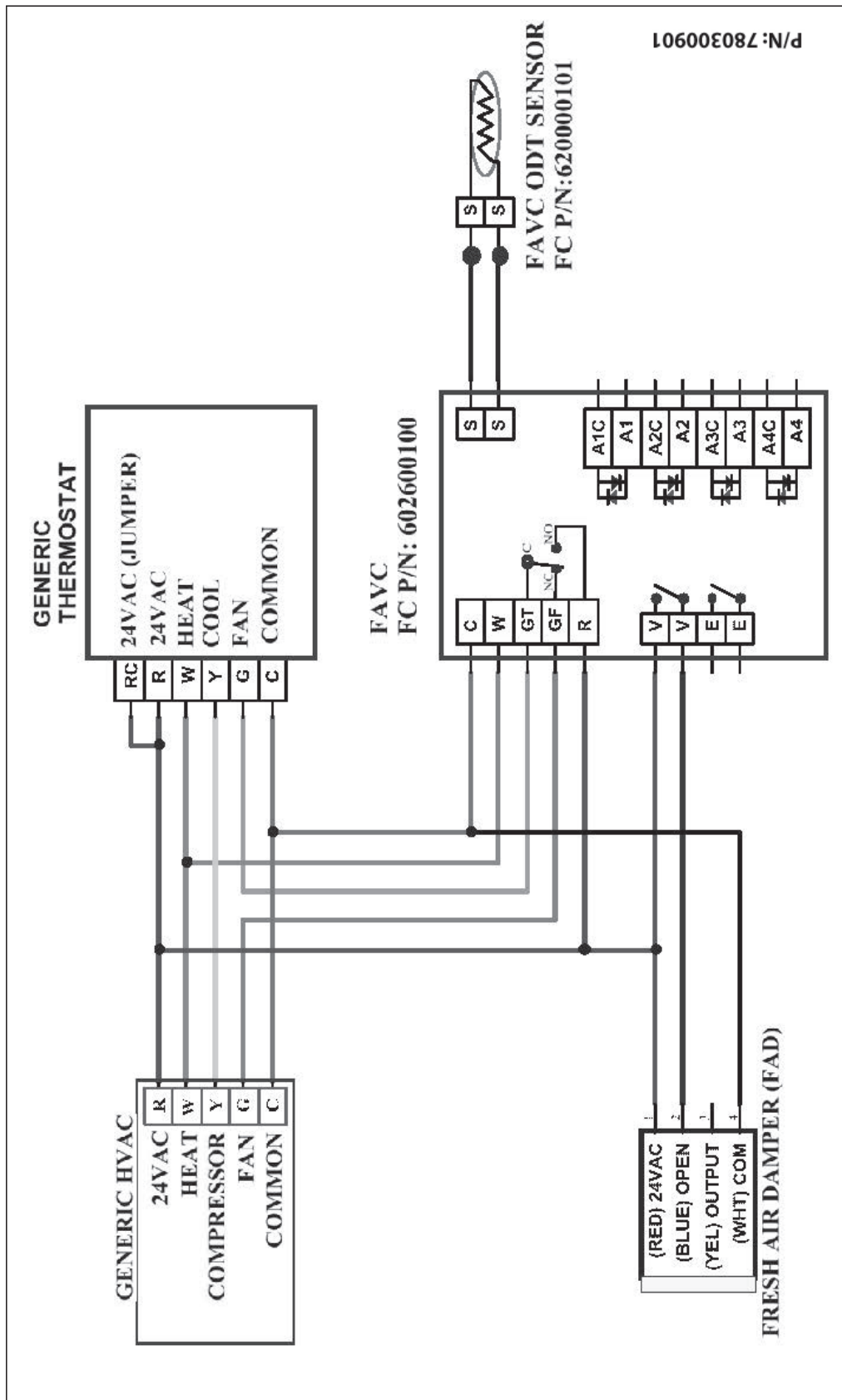
- Red Wire: Provides constant 24VAC power to the damper actuator at all times.
- White Wire: 24VAC common connection.
- Blue Wire: When 24VAC is applied, the damper actuator is energized and the damper opens. When 24VAC is removed, the damper automatically returns to the closed position.

**CONTROL  
WIRING  
SOLUTIONS**





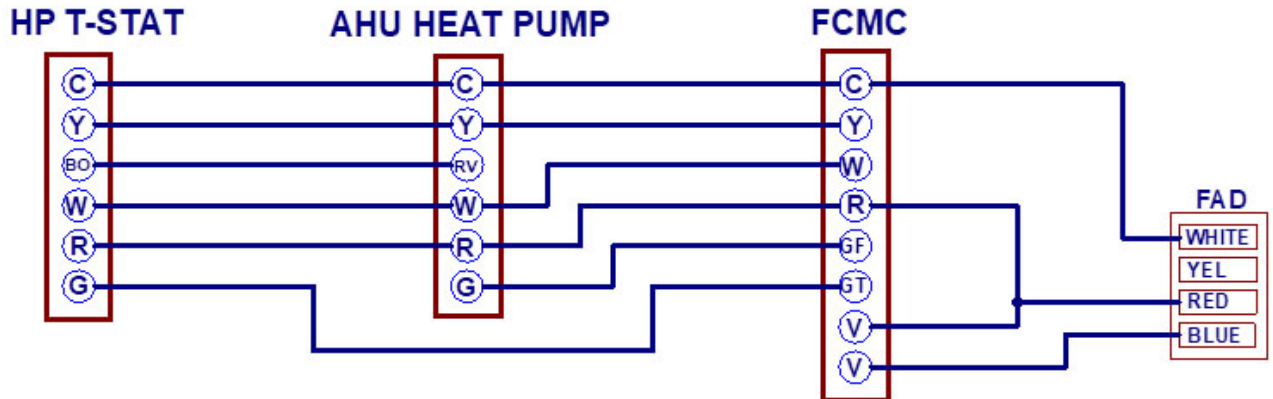
## WIRING





## WIRING

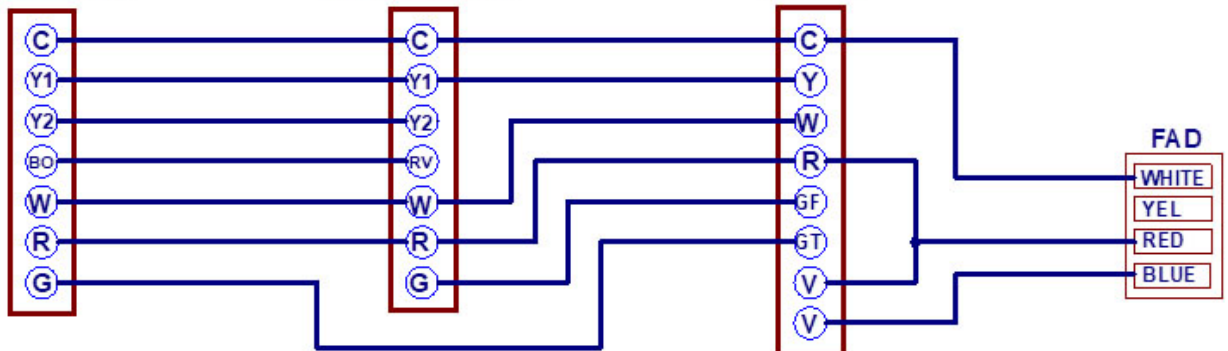
### GENERIC HEAT PUMP WIRE DIAGRAM



### 2 STAGE HP T-STAT

### 2 STAGE AHU HEAT PUMP

### FCMC

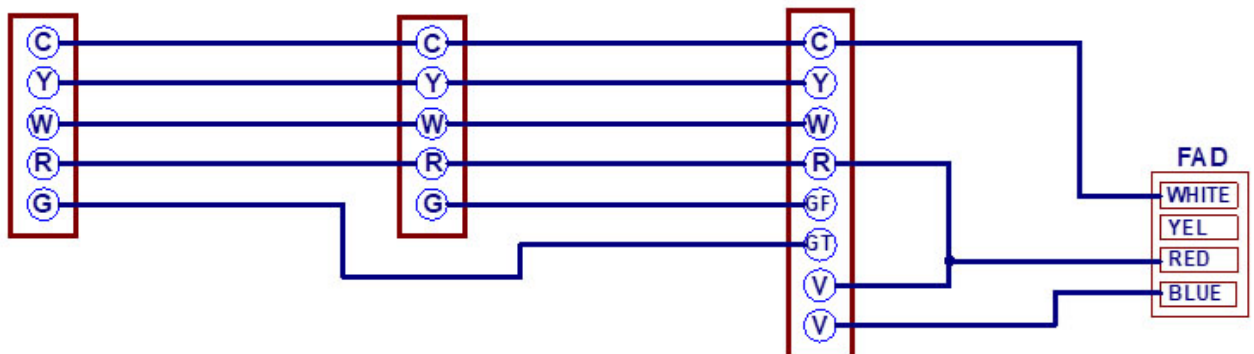


### CONVENTIONAL HEAT/COOL WIRE DIAGRAM

### T-STAT

### AHU

### FCMC







## TROUBLESHOOTING

| SYMPTOM                                  | POSSIBLE REASON                                                   | TROUBLESHOOTING PROCEDURE                                                                                                                                     |
|------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Damper does not open or close            | No power to furnace, air handler, or controller                   | <ul style="list-style-type: none"><li>• Verify power is restored to all system components and confirm all disconnects are turned on</li></ul>                 |
|                                          | Incorrect wiring connection to controller                         | <ul style="list-style-type: none"><li>• Inspect wiring connections and confirm wiring matches the installation diagram and controller requirements.</li></ul> |
| Damper operates intermittently           | Loose electrical connections                                      | <ul style="list-style-type: none"><li>• Tighten all wiring terminals and inspect for damaged or disconnected wires.</li></ul>                                 |
| Damper blade does not move freely        | Damper housing distorted during installation                      | <ul style="list-style-type: none"><li>• Loosen mounting screws, realign the damper housing, and reinstall without over-tightening</li></ul>                   |
| Reduced fresh ai airflow                 | Damper installed too far from controller or excessive duct length | <ul style="list-style-type: none"><li>• Shorten inlet duct length if possible and install damper closer to the controller for improved performance</li></ul>  |
| Excessive noise during damper operation  | Damper improperly mounted or unsupported                          | <ul style="list-style-type: none"><li>• Verify damper is securely mounted and ductwork is properly supported</li></ul>                                        |
| Motor overheats or fails                 | Damper obstructed or unable to rotate freely                      | <ul style="list-style-type: none"><li>• Inspect damper blade for obstructions and verify free movement before operation</li></ul>                             |
| Damper does no operate in automatic mode | Power switch not set correctly                                    | <ul style="list-style-type: none"><li>• Set damper power switch to the UP or AUTOMATIC position per installation instructions</li></ul>                       |
| Damper remains open continuously         | Incorrect controller setup or wiring                              | <ul style="list-style-type: none"><li>• Verify controller programming and inspect wiring connections for proper operation.</li></ul>                          |

This manual may be downloaded and printed from the Field Controls website ([www.fieldcontrols.com](http://www.fieldcontrols.com))

**WARRANTY**

For warranty information about this or any Field Controls product, visit:  
[www.fieldcontrols.com/](http://www.fieldcontrols.com/)

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