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# INSTALLATION INSTRUCTIONS

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## Full Flow Low Leakage Economizer with Exhaust for Building Applications (To Be Used with Field-Installed DCV Controls)

Models:

ECON-NC2 & ECON-NC3  
(Factory-Installed Vent Option)

For Use with 1-1/2 Through 3 Ton  
Wall Mount Air Conditioners  
and Heat Pumps

**NOTE:** *These instructions are written to cover field-installed economizers, but are also included with factory-installed economizers. For factory-installed economizers, all portions addressing "installation" are for reference only.*



Climate Control Solutions

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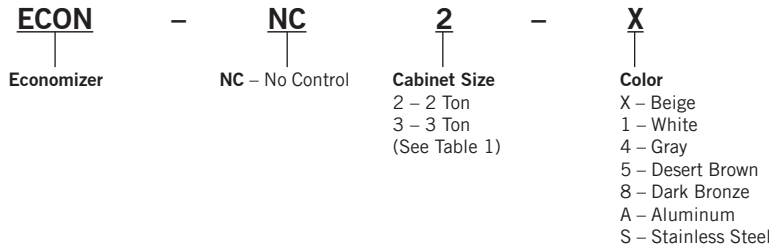
## TABLE

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## Economizer Features

- One piece construction—easy to install. Direct-drive actuator eliminates linkage.
- Exhaust air damper—built in with positive closed position. Provides exhaust air capability to prevent pressurization of tight buildings.
- Actuator Motor – 24 volt, power-open, spring-return, direct-coupled with stall protection. Self-centering shaft clamp and access cover facilitate ease of replacement/maintenance.
- 10K outdoor temperature sensor

**Economizer with Exhaust Model Nomenclature**



**General Information**

The economizer should only be installed by a trained heating and air conditioning technician. These instructions serve as a guide to the technician installing an economizer package, not as a step-by-step procedure with which the mechanically inclined owner can install the package.

The economizer housing is shipped in one carton, which contains the electrical harness, miscellaneous hardware and installation instructions.

Any wall mount unit equipped with an economizer must also have a factory/field installed low ambient control. Please refer to appropriate model/year Specification Sheet for requisite field installed low ambient control kit part numbers.

**Unpacking**

Upon receipt of the equipment, be sure to compare the model number found on the shipping label with the accessory identification information on the orders and shipping document to verify that the correct accessory has been shipped.

Inspect the carton housing of each economizer assembly as it is received and, before signing the freight bill, verify that all items have been received and there is no visible damage. Note any shortages or damage on all copies of the freight bill. The receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier’s agent. Concealed damage not discovered until after loading must be reported to the carrier within 15 days of its receipt.

**Description**

ECON-NC economizers are designed to be used with the wall mount series air conditioners and heat pumps, shown in Table 1, equipped with low ambient controls and field-installed controller. They are electromechanical economizer systems designed to provide “free” cooling where the outdoor air temperature is cool enough to provide the needed cooling without running the compressor, or in addition to the compressor. When cooling is required, the system automatically takes advantage of cold outdoor air when available and uses it for first stage cooling. This then reduces the need to run the air conditioning compressor providing lower operating costs and increasing the service life of the equipment. If the outdoor air temperature is too warm to be sufficient for cooling, the dry bulb outdoor air temperature sensor detects the condition and should automatically close the outdoor air intake/exhaust damper, open the return air damper and switch to compressor-only operation.

**ECON-NC Series economizers are not for use with variable capacity ECU models.**

**TABLE 1  
Economizer Application**

Model ①	For Use with the Following Units		
ECON-NC2	W18A	W18H	W18L
	W24A	W24H	W24L
ECON-NC3	W30A	W30H	W30L
	W36A	W36H	W36L

① Low ambient control is required w/economizer for low temperature operation.

# INSTALLATION OF FIELD-INSTALLED ECONOMIZER

## Basic Installation

### WARNING

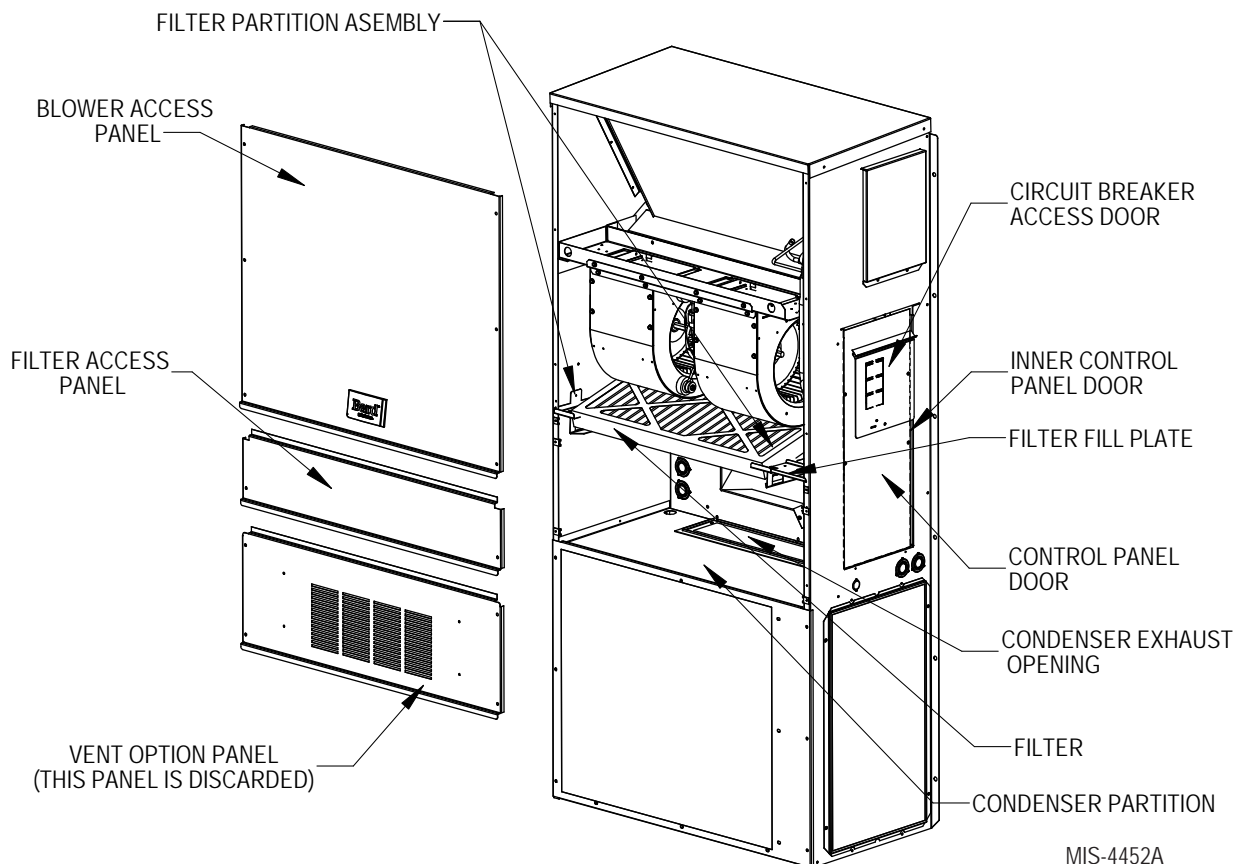
Electrical shock hazard. Electrical shock can result in serious injury or death. Disconnect remote electric power supply or supplies before servicing.

## Preparing Unit for Economizer Installation

1. Disconnect power to unit.
2. Unpack the economizer assembly, which includes the integral economizer with attached electrical harness, mixed air sensor, body panels, miscellaneous hardware and installation instructions.

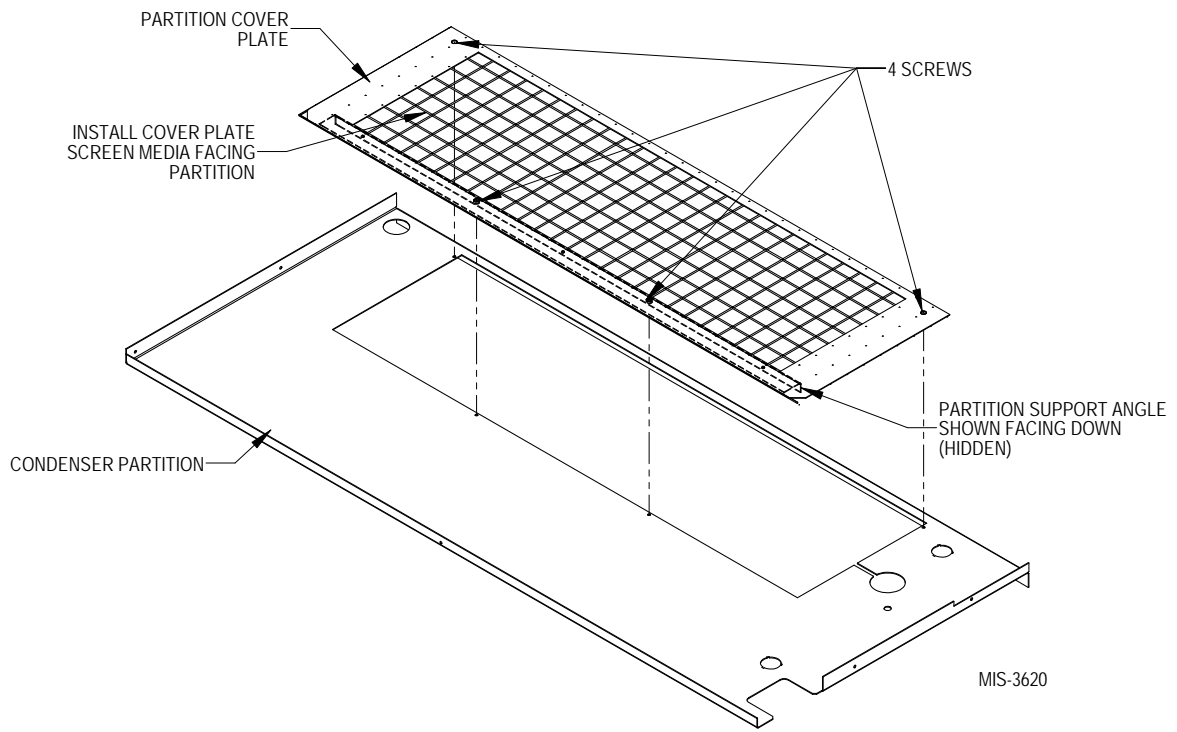
3. From existing wall mount unit, remove and save (or discard) as directed (see Figure 1):
  - Blower access panel and screws (save)
  - Ventilation access panel (discard)
  - Filter access panel (discard)
  - Filter (save)
  - Outer and inner control panel doors and screws (save)
4. Remove and discard the exhaust cover plate (save screws).
5. Install new condenser exhaust plate with screen over opening into condenser section (see Figure 2).
6. The unit includes a filter partition and tray assembly installed below the blower. The ventilator can be installed without moving this assembly, but it may be beneficial to loosen the front two (2) mounting screws of the filter partition assembly. The assembly can then be lifted up slightly to allow more room for installation of the unit ventilator.
7. Install the return fill plate using three (3) screws as shown in Figure 3 on page 6.

**FIGURE 1**  
**Wall-Mount Unit Access Panels**



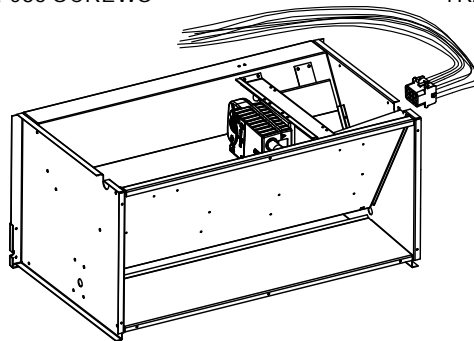
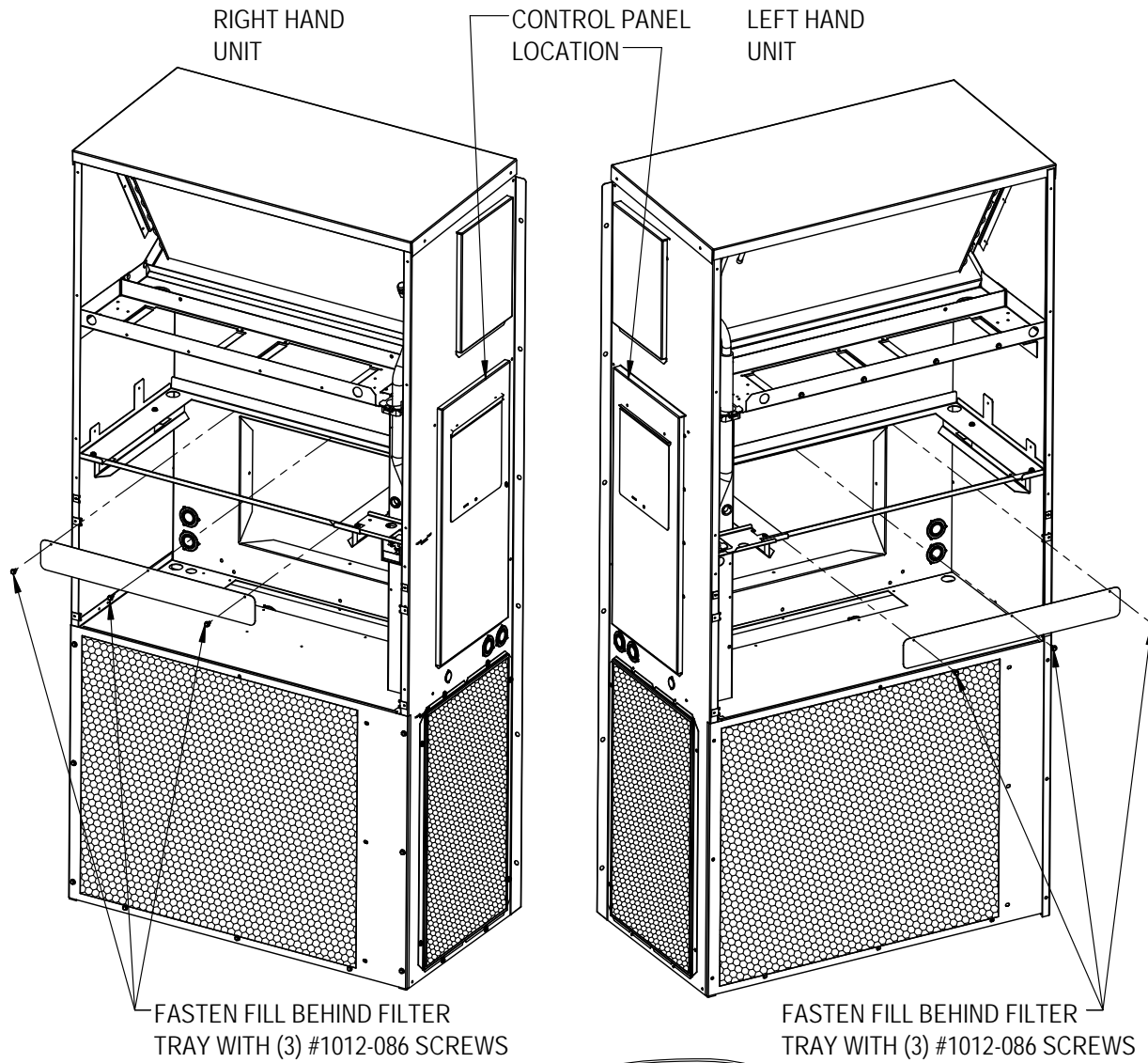
MIS-4452A

**FIGURE 2**  
**Condenser Exhaust Plate with Screen**



**FIGURE 3**  
**Economizer and Return Fill Installation**

**NOTE:** The return fill plate will need to be installed before the economizer assembly (see below).



MIS-4366 A

RIGHT AND LEFT HAND UNIT VENT ASSEMBLY  
USE 52" WIRE HARNESS FOR LEFT HAND UNITS ONLY

### Outdoor Air Sensor Installation

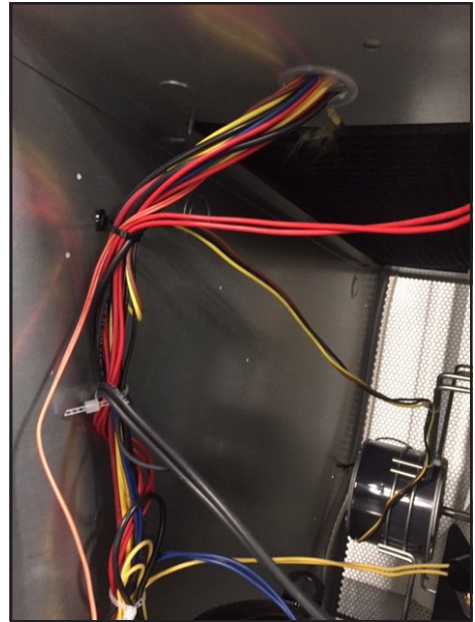
1. Remove and save both side grilles and screws.
2. Install the outdoor temperature sensor in the lower condenser section on the same side as the control panel with two (2) screws provided as shown in Figure 4.

**FIGURE 4**  
Outdoor Air Sensor Installation



through the grommet in the bottom of the control panel. Secure with wire ties (provided) to the other wires in the grommet. Ensure the wire harness cannot contact moving parts or copper tubing. Replace side grilles.

**FIGURE 5**  
Route Wire Harness

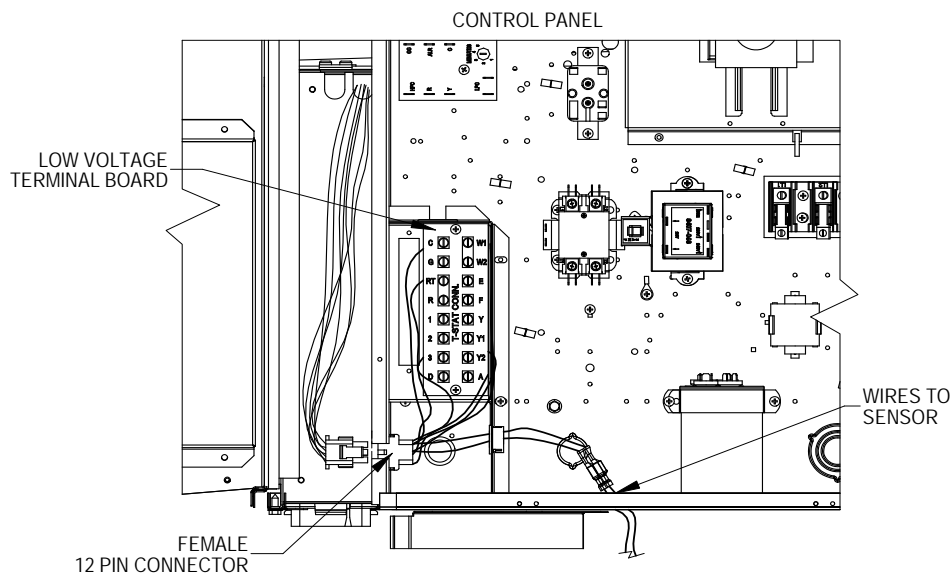


3. Route the wire harness through the condenser base and into the control panel (see Figure 5). Secure with two wire ties (provided). Push harness up

### Economizer Installation

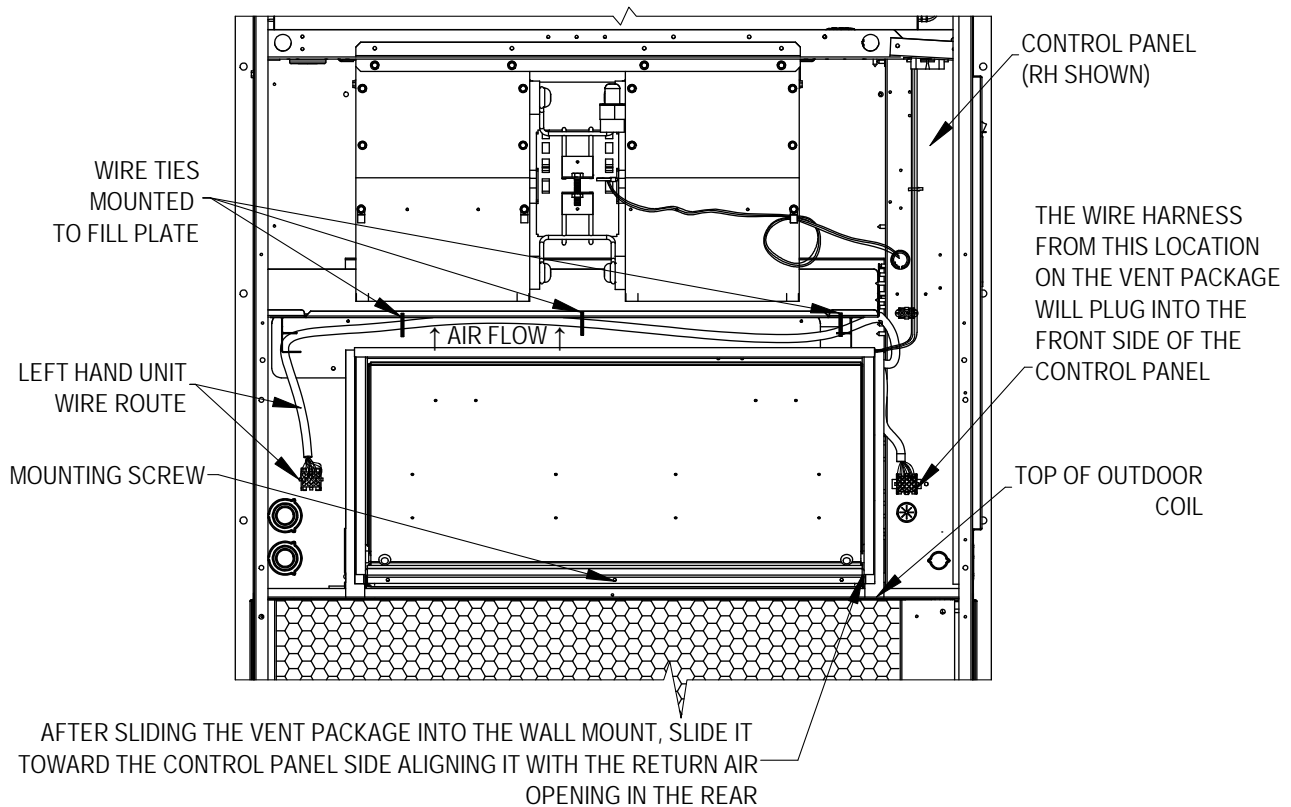
1. Connect 12-pin male plug into female plug in side of the control panel as shown in Figure 6. See wiring diagram found on page 10.

**FIGURE 6**  
Control Panel



MIS-4029

**FIGURE 7**  
Mixed Air Temperature Sensor Installation



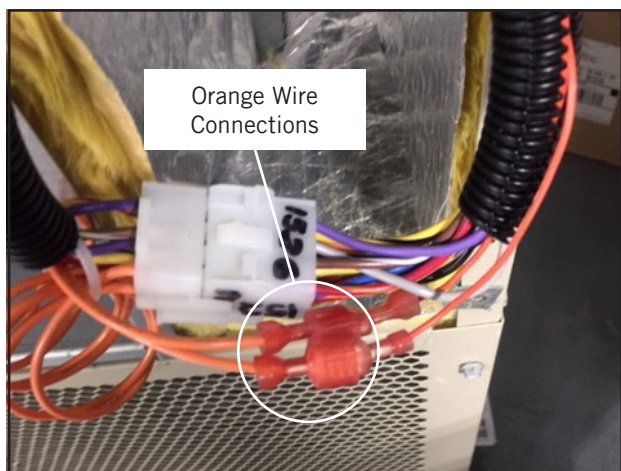
MIS-4457

2. Insert economizer into opening in wall unit between the filter tray and condenser section, being careful not to tear unit insulation. Fully seat economizer assembly to the rear of the wall unit cavity. Slide economizer to right and line up with return air opening in back of wall unit.
3. Re-install and tighten front filter tray mounting screws (if loosened in Step 6 on page 4).
4. **Left hand units:** Use the 52" wire harness (provided). Plug the 12-pin male connector into the female plug in the control panel. Route the wire harness to the back of the economizer and attach to the return fill plate using the push-in wire ties provided (see Figure 7). Plug the male 12-pin connector from the economizer actuator into the wire harness.

**Right hand units:** Plug the 12-pin male connector straight into the female plug in the control panel.

Plug the outdoor sensor wire connectors into the spade connectors on the 12-pin male plug (orange wires) as shown in Figure 8.

**FIGURE 8**  
Outdoor Sensor Wire Connections



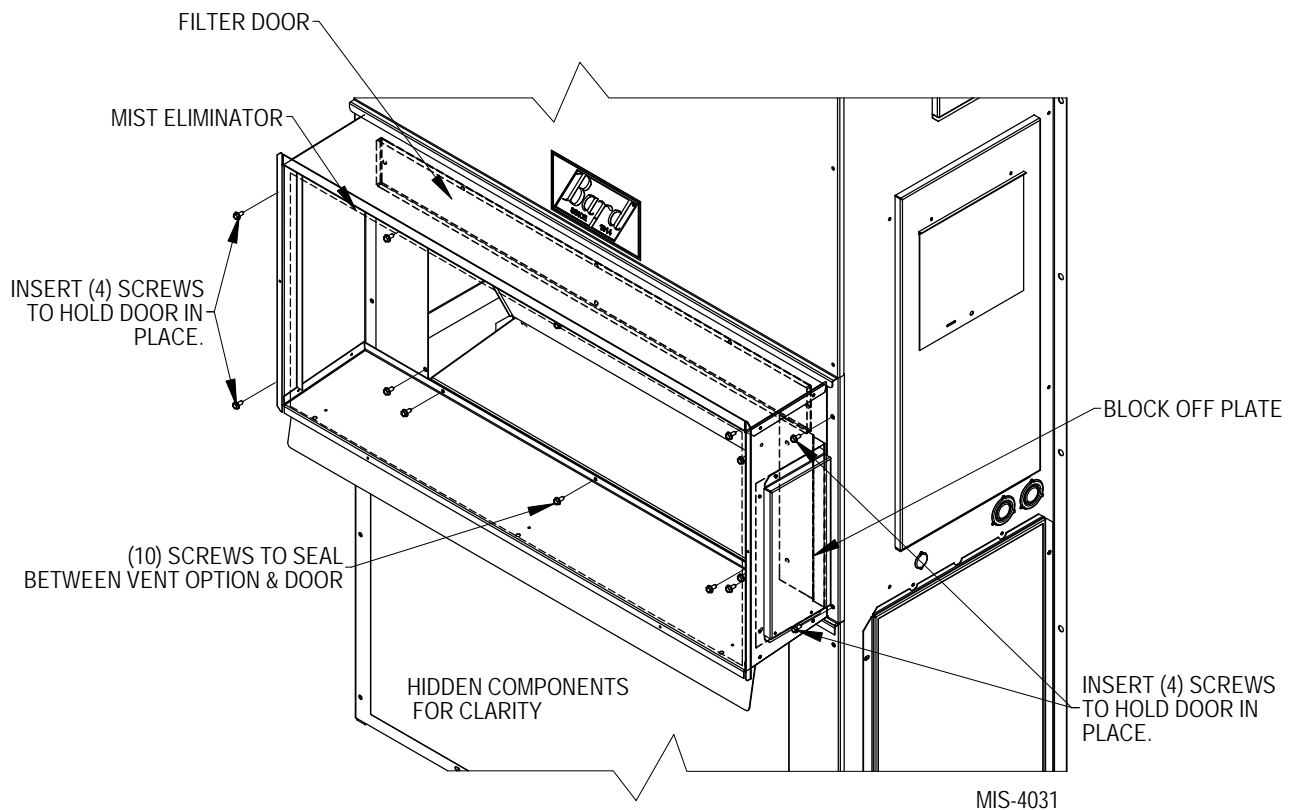


5. Remove front door, control door and mist eliminator from economizer hood assembly.
6. Lift economizer hood to unit and hold in position. Line up four (4) holes in outer economizer hood door (two on each side) with corresponding holes in unit and mount economizer hood to unit with four (4) screws.
7. Connect vent option front to vent hood door (see Figure 9) using ten (10) screws (supplied).
8. Re-insert filter into filter brackets. Arrow on filter should point up.
9. Install filter door.
10. Attach blower access panel.

#### Economizer Checkout

1. Attach wall unit outer and indoor control panel doors.
2. Turn power to unit on.
3. After confirming economizer operation, attach the economizer hood mist eliminator (with airflow arrow pointed towards unit), control door and front door.

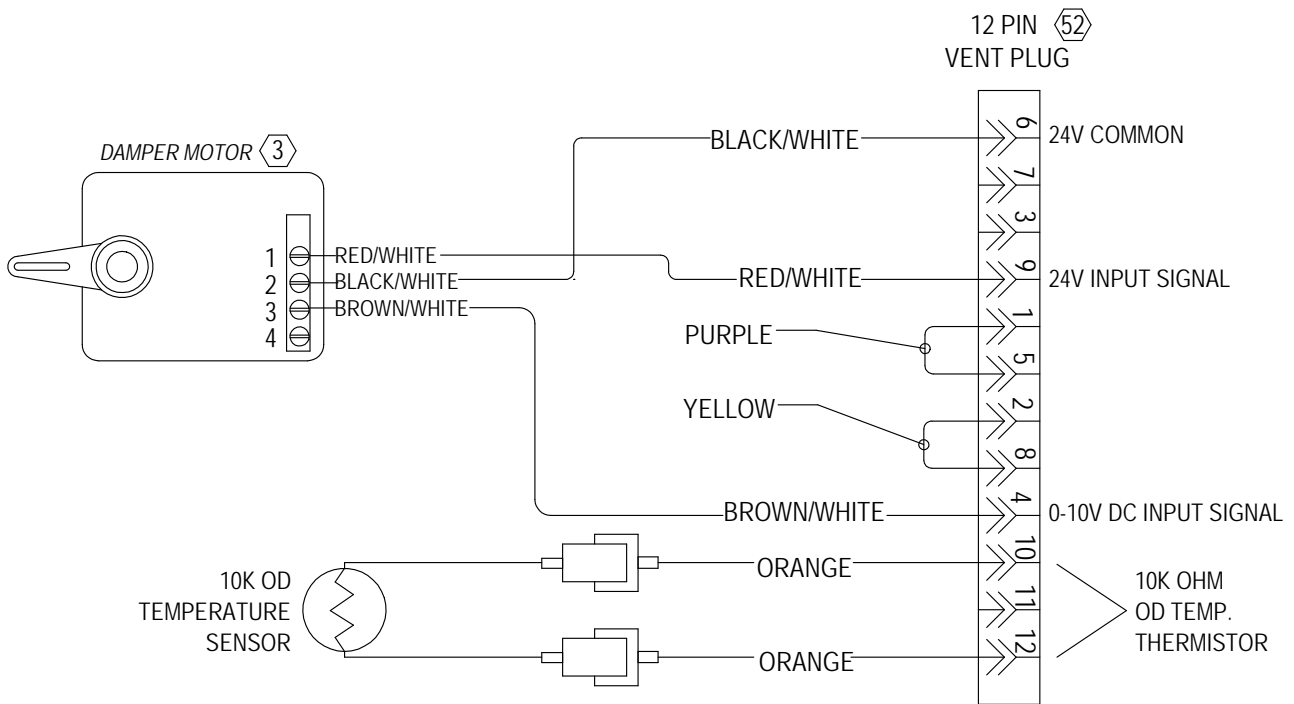
**FIGURE 9**  
**Vent Option Door Installation**



## Control Wiring Connection Diagram

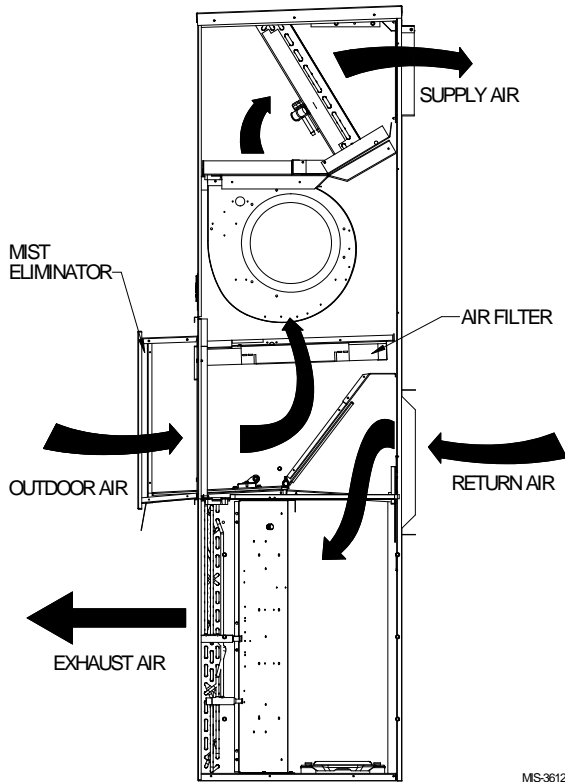
See economizer wiring diagram below. For low voltage connections, refer to the wall-mount unit installation instructions manual.

**FIGURE 10**  
**Economizer ECON-NS\* Wiring Diagram**

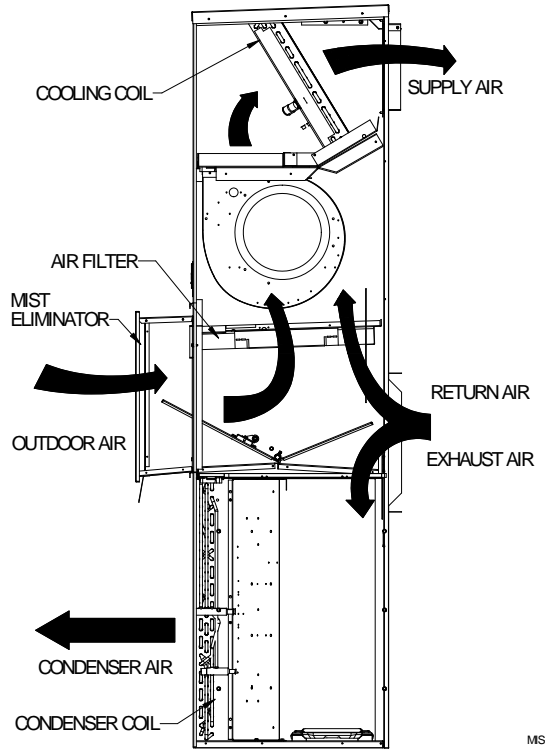


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**FIGURE 11**  
100% Outside Airflow Path



**FIGURE 12**  
Mixed Airflow Path



**FIGURE 13**  
100% Closed Loop Airflow Path

