Installation Instructions

0 to 100% Horizontal Dry Bulb Economizer

Precedent™ Packaged Rooftop Units
12.5 to 25 Tons

Model Number:	**Used With:**
FIAECON303*	Precedent D cabinet (Digit 39 = D)

⚠SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

September 2024 **ACC-SVN233C-EN**

Introduction

Read this manual thoroughly before operating or servicing this unit.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE	Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.

⚠WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labeling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

⚠WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

⚠WARNING

R-454B Flammable A2L Refrigerant!

Failure to use proper equipment or components as described below could result in equipment failure, and possibly fire, which could result in death, serious injury, or equipment damage.
The equipment described in this manual uses R-454B refrigerant which is flammable (A2L). Use ONLY R- 454B rated service equipment and components. For specific handling concerns with R-454B, contact your local representative.

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Trademarks

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Revision History

- Used with model number information updated.
- Updated fresh air options module location figure in Installation chapter.

Inspection

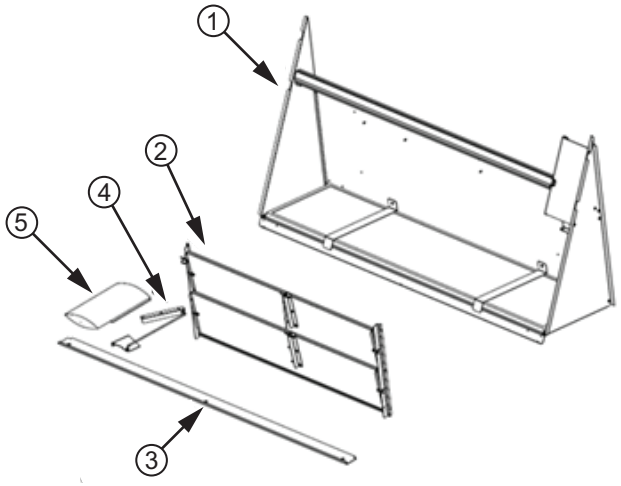
1. Unpack all components of the kit.
2. Check carefully for shipping damage. If any damage is found, report it immediately, and file a claim against the transportation company.

Parts List

Each economizer ships partially assembled. The steps for installation are illustrated throughout this guide. Refer to the figures as the steps are performed.

Figure 1 illustrates the major components of the economizer when shipped for field installation. As the economizer is not crated, locate the following parts:

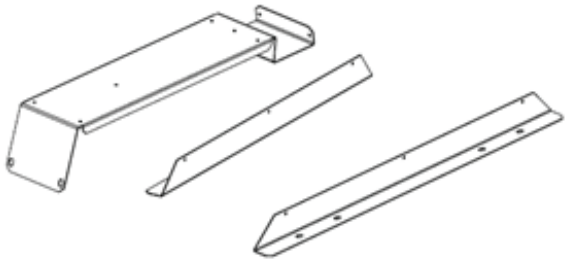
Figure 1. Economizer components



Item	Description	Qty
1	Outdoor air damper assembly	1
2	Installation Instruction manual	1
3	Block-off	1
4	Connecting rod assembly	1
5	Plastic bag of miscellaneous parts: • Screws • Installation Instruction	–

The following parts are used for shipping only and can be discarded:

Figure 2. Discard these parts



Installation

⚠WARNING

Hazardous Voltage w/Capacitors!

Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury. Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/ tagout procedures to ensure the power cannot be inadvertently energized. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

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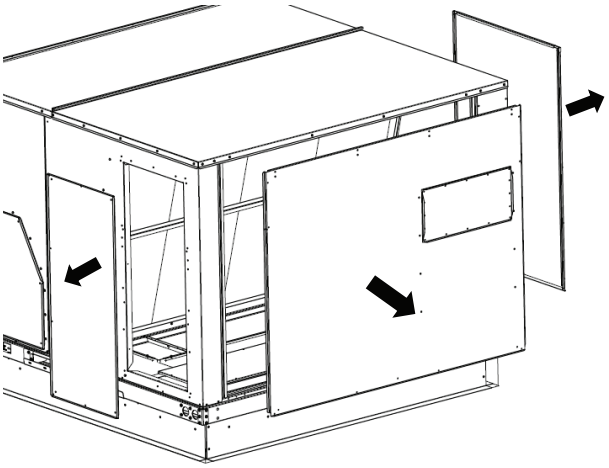
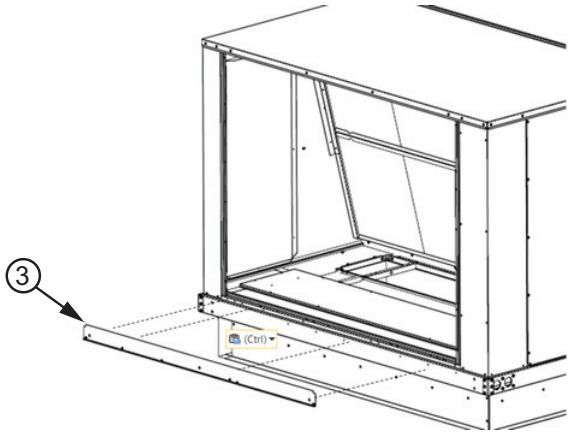
1. Remove the filter/fan compartment access panel and the unit end panel (evaporator end).

Figure 3. Remove panels



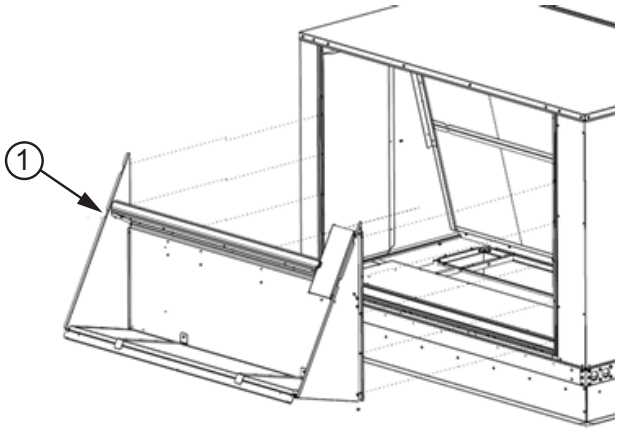
2. Attach block-off (3) to unit by using four screws.

Figure 4. Attach block-off



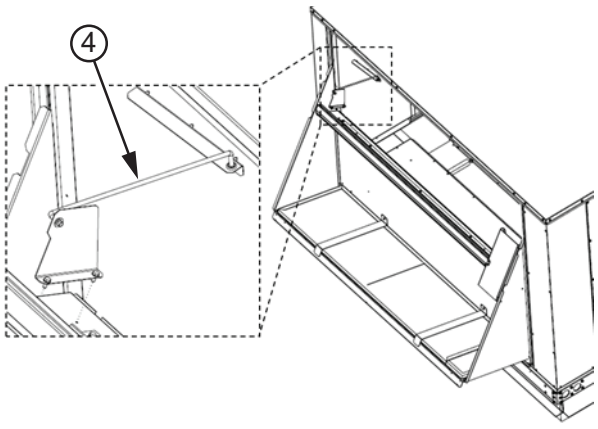
3. Attach outdoor air damper assembly to unit using ten screws.

Figure 5. Secure economizer to unit



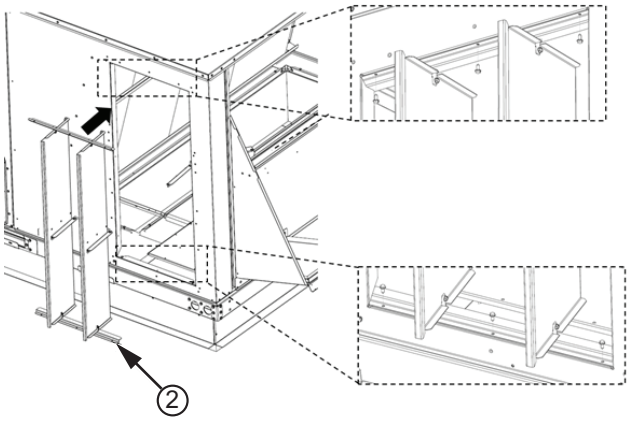
4. Attach connecting rod assembly (4) to outdoor damper using two screws.

Figure 6. Attach rods to dampers



5. Attach return air damper assembly (2) to top and bottom flanges of return opening using six screws.

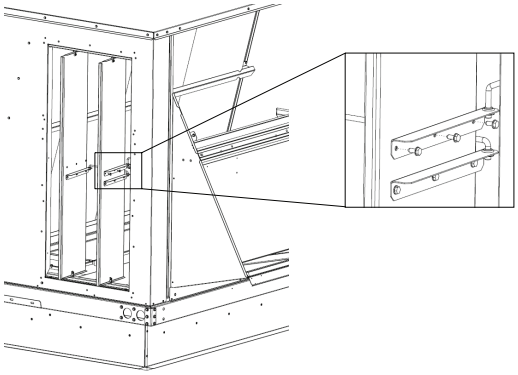
Figure 7. Attach return air damper assembly to return opening



6. Attach connecting rod to return air damper using three screws.

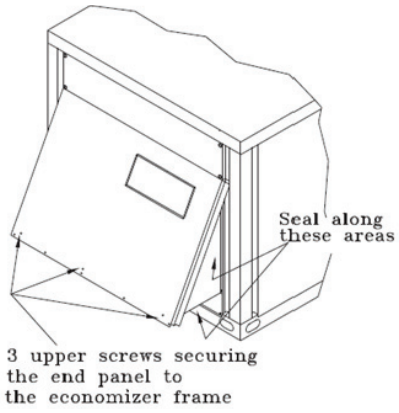
Note: *If optional sensors for humidity and temperature monitoring will be used (FIAENTH001* and FIAENTH002*), install them at this step. Use the instructions provided in those kits.*

Figure 8. Attach connecting rods to return air damper



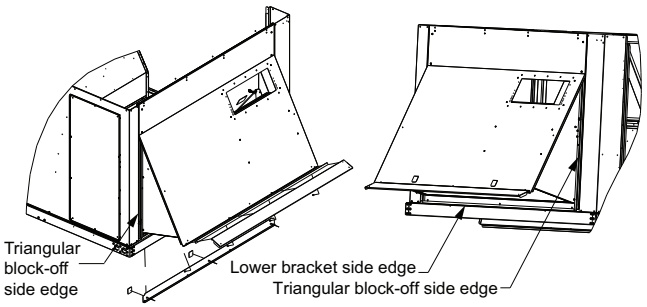
7. Attach side panel back to unit.

Figure 9. Install side panel



8. Install rain diverter as shown in Figure 10. Use the four screws provided.

Figure 10. Rain diverter installation



9. Apply silicone or weather resistance sealant (field supplied) between unit and edges of the side triangular block-offs and lower bracket.

Minimum Position Setting

To adjust the minimum position setting and check out the economizer, the power must be connected.

1. Close the unit disconnect and place the zone sensor fan selector in the fan **ON** position and the heat/cool selector in the **OFF** position. This will place the damper in the minimum ventilation position.

   To adjust the minimum position setting for the required ventilation air, use the Symbio™ Service and Installation mobile app or Symbio™ 700 on-board UI to adjust the economizer minimum position setpoint BAS in the Fresh/ Return Air settings menu. The damper will open to this setting each time the blower circuit is energized.

   When adjusting minimum position, the damper may move to the new setting in several small steps. Once the damper has remained in position for 10 to 15 seconds without movement, it can be assumed it is at the new position.

2. Replace the filter access panel.

   The damper will close when the blower circuit is de-energized.

Dry Bulb Settings

Standard economizer dry bulb changeover is field selectable and has a range of 50ºF to 140ºF.

Reference Enthalpy Settings

Economizer enthalpy changeover is field selectable and has a range of 50ºF to140ºF. The default is 60ºF. This selection can be made using the Symbio™ Service and Installation mobile app or Symbio™ 700 on-board UI.

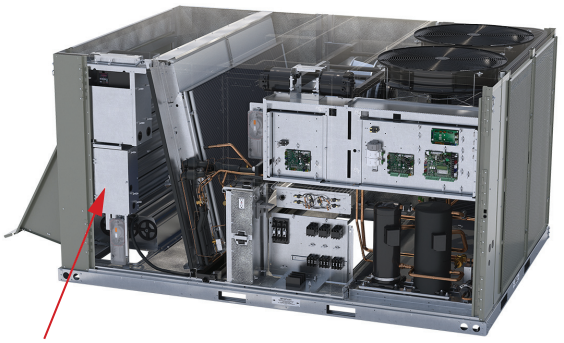
Wiring Connections

1. Use the supplied harness to connect PPF87 to the actuator connector.
2. Route harness to fresh air options module located in the return section and connect to FAOM-J11. Refer to Figure 11.
3. After installation is complete, update the Symbio™ 700 UC unit configuration to enable this installed feature.
4. Refer to main unit schematic sheet 6 for electrical connections to fresh air module located in return section control box. See Figure 11.

Table 1. Precedent economizer control options

Control Option	Enable Conditions	Optional Sensors Required
Comparative Enthalpy	Outside Air Enthalpy < Return Air Enthalpy – Econ Enthalpy Offset and Outside Air Temperature < Economizer Dry Bulb Setpoint – Econ Dry Bulb Offset	Outdoor Air Temperature Sensor Outdoor Air Humidity Sensor Return Air Temperature Sensor Return Air Humidity Sensor
Reference Enthalpy	Outside Air Enthalpy < Reference Enthalpy Setpoint – Econ Enthalpy Offset and Outside Air Temperature < Economizer Dry Bulb Setpoint - Econ Dry Bulb Offset	Outdoor Air Temperature Sensor Outdoor Air Humidity Sensor
Dry Bulb	Outside Air Temperature < [Economizer Outdoor Air Enable Setpoint BAS - Economizer Dry Bulb Enable Offset]	Outdoor Air Temperature Sensor
Differential Dry Bulb	Outside Air Temperature < RA Temp - Economizer Dry Bulb Enable Offset - Economizer Dry Bulb Disable Return Air Offset	Outdoor Air Temperature Sensor Return Air Temperature Sensor

Figure 11. Fresh air options module location



Fresh air options module access (D cabinet)

Trane and American Standard create comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or americanstandardair.com.

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Supersedes ACC-SVN233B-EN (Apr 2023)