Installation Instructions

Economizer

Precedent™ Packaged Rooftop Units with Symbio™ Controls

Model Number:	Used With:
FIAECON002*	T/YS*072-150

⚠ 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.

August 2022 **ACC-SVN261A-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-including industry replacements for CFCs and HCFCs such as saturated or unsaturated HFCs and HCFCs.

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.**

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General Information

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.
3. Visually inspect the components for shipping damage as soon as possible after delivery, before it is stored. Concealed damage must be reported within 15 days.
4. If concealed damage is discovered, stop unpacking the shipment.
5. Do not remove damaged material from the receiving location. Take photos of the damage, if possible. The owner must provide reasonable evidence that the damage did not occur after delivery.
6. Notify the carrier's terminal of damage immediately by phone and by mail. Request an immediate joint inspection of the damage by the carrier and the consignee.

Note: *Do not attempt to repair any damaged parts until the parts are inspected by the carrier's representative.*

Parts List

- One (1) Economizer Assembly
- One (1) Mist Eliminator
- One (1) Wire Tie
- Ten (10) Screws
- Actuator Harness
- One (1) Grommet (24)
- One (1) Duct Blockoff Plate (15)
- 12 Screws
- One (1) Bottom Blockoff (21)

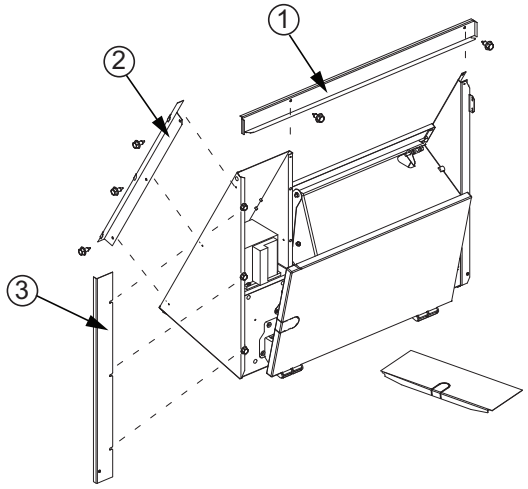
Field Installed Assembly and Installation

This section covers installation of economizer units not installed in the rooftop unit at the factor.

Unpack Economizer

7. Each damper ships with items 1, 2 and 3 attached.
8. Remove screws completely from items 1 and 2.
9. Remove item 3 by loosening the three screws but do not remove them. See below figure.

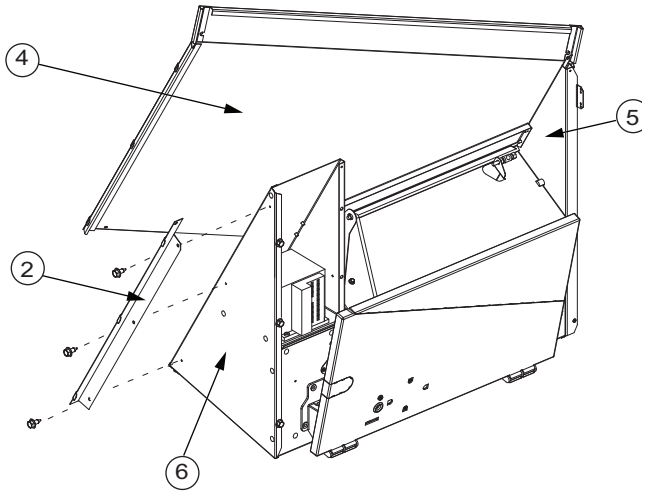
Figure 1. Unpacking the economizer



Assembly End Panel

1. Align three slots in 4 with three tabs on 5.
2. Pivot 4 into place.
3. Align three tabs on 2 with three slots in 4.
4. Pivot 2 into place.
5. Secure 2 with three screws into 6. See below figure.

Figure 2. Assembling the end panel



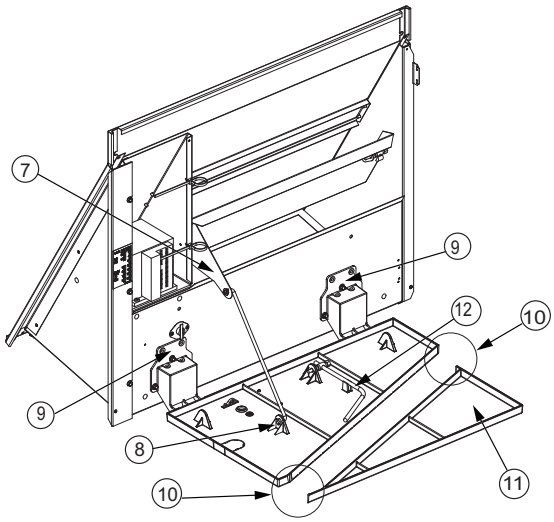
Reconfigure the Damper (for Horizontal Installation only)

The economizer damper is pre-configured at the factory for downflow applications. Reconfigure the damper for horizontal applications.

See figure below for disassembly.

1. Remove two screws from 7.
2. Remove nut and disassemble 8.
3. Remove six screws from 9 (three in each location).
4. Make two cuts at 10.
5. Detach and discard 11.

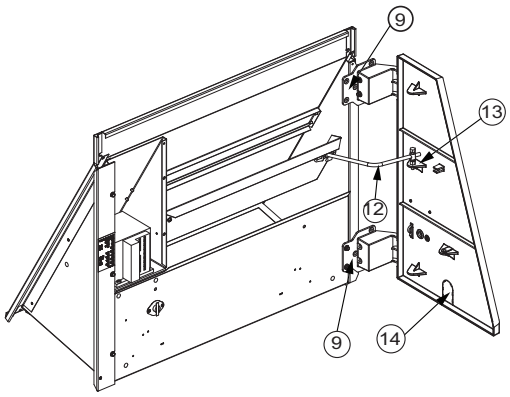
Figure 3. Disassembling the damper



See below figure for reassembly.

1. Attach two screws at each location 9.
2. Connect 12. Do not allow more than 0.25 in. (6.25 mm) of rod to protrude through the ball joint at 13.
3. If the unit has a smoke detector, remove knockout 14.

Figure 4. Reassemble the damper



Optional Sensors

If the optional sensors for humidity and temperature monitoring are needed (FIAENTH001* and FIAENTH002*), install them using the instructions provided in those kits.

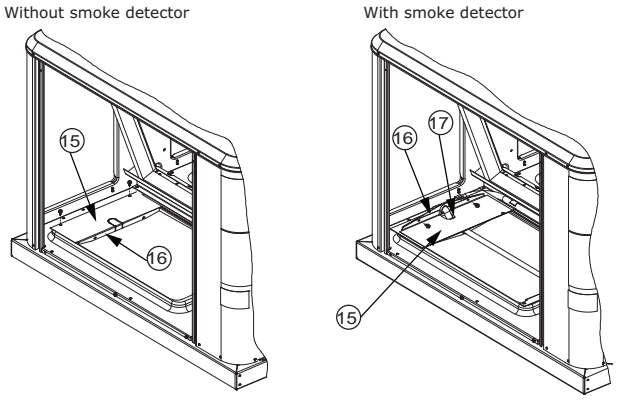
Install Duct Blockoff Plate (Downflow Units only)

Important: *If power exhaust or barometric relief accessory kits are installed along with an economizer, do not install the duct blockoff plate.*

See below figure.

- For units without a smoke detector, install 15 with flange 16 pointing down.
- For units with a smoke detector, remove knockout 17, and then install 15 with flange 16 pointing up.

Figure 5. Installing the duct blockoff plate

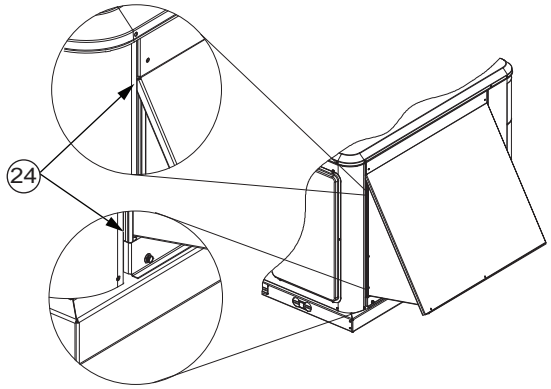


Install Economizer into the Rooftop Unit

See Figure 1, p. 6, Figure 6, p. 7, and Figure 8, p. 8.

1. Lift the assembled economizer unit into position.
2. Fit the upper left hand corner around the channel in the cabinet post.
3. Pivot the economizer into the opening in the cabinet.
4. Lift the economizer and panel assembly to align the upper screw holes.
5. Secure the top left and top right with screws.
6. Pull out on the bottom of the economizer and secure it with the bottom three screws 23.
7. Remove the filter access panel.
8. Position 3 inside the filter section. 3 will slip over the three screws.
9. Align the holes in the plate with the holes in the panel.
10. Secure the bottom right with a screw 22.
11. Install the bottom blockoff 21 and secure it with three screws 23.
12. Using field supplied silicone, apply sealant around economizer hood 24.

Figure 6. Selling and seams



Symbio™ Wiring Connections

Using the supplied harness connect PPF87 to the actuator connector. Route harness to fresh air options module located in the return section and connect to FAOM-J11. After installation is complete, Symbio™ 700 UC unit configuration will need to be updated to reflected installed option.

Factory Installed Economizer Set-Up

This section covers setup of economizer units that have been installed in the rooftop unit at the factory.

Downflow Configuration

⚠WARNING

Hazardous Voltage!

Failure to disconnect power before servicing could result in death or serious injury.

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/ tagout procedures to ensure the power can not be inadvertently energized. Verify that no power is present with a voltmeter.

See Figure 7, p. 8, and Figure 8, p. 8.

1. Remove filter access panel.
2. Remove the screw that holds bottom blockoff 21 in place, and then remove bottom blockoff 21 from its shipping location.
3. Remove the bottom three screws from the economizer panel 23.
4. Pull the economizer assembly out into operating position.

5. Secure the economizer assembly with two screws 22 at the bottom of the corner posts.
6. Install 21 and secure with three screws 23.
7. Using field supplied silicone, apply sealant around economizer hood 24.

Figure 7. Removing the bottom blockoff

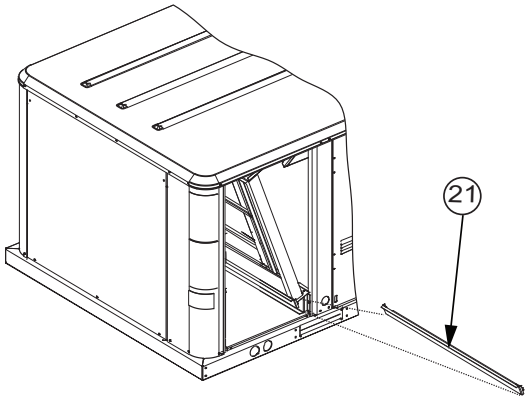
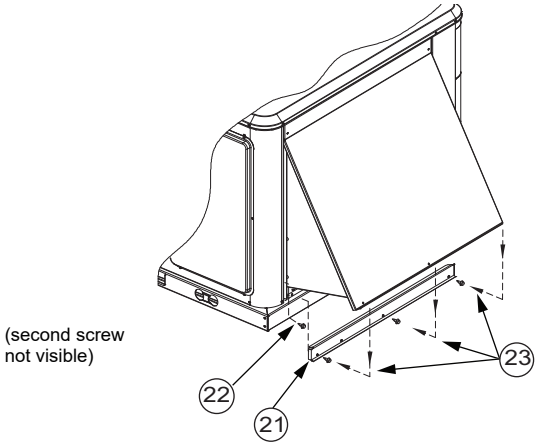


Figure 8. Fastening the economizer and bottom blockoff



Horizontal Configuration

⚠WARNING

Hazardous Voltage!

Failure to disconnect power before servicing could result in death or serious injury.

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Verify that no power is present with a voltmeter.

The economizer must be removed from the rooftop unit and reconfigured for horizontal operation.

1. Remove filter access panel.
2. Remove 2, shown in Figure 1, p. 6. (Leave the screws loosely in place.)
3. Remove the bottom three screws and top two screws from the economizer panel.
4. Remove 15, shown in Figure 5, p. 7.
5. Pull the economizer assembly and end panel out of the unit.
6. Reconfigure the damper for horizontal operation. See "Reconfigure the Damper (for Horizontal Installation only)," p. 6 for instructions, and then return to this procedure.
7. If optional sensors for humidity and temperature monitoring are to be used (FIAENTH001* and FIAENTH002*), install them now. Use the instructions provided in those kits.
8. Remove supply and return duct covers from the horizontal openings and install over the downflow openings.
9. Reinstall the economizer. See "Install Economizer into the Rooftop Unit," p. 7 for instructions.

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.
2. 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 - 15 seconds

without movement, it can be assumed it is at the new position.

3. 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 50-140ºF.

Table 1. Precedent economizer control options

Control Option	Enable Conditions	Option Sensor Required
Comparative Enthalpy	Outside Air Enthalpy < Return Air Enthalpy – Econ Enthalpy Offset AND Outside Air Temperature < Economizer Drybulb Setpoint – Econ DryBulb 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 Drybulb Setpoint - Econ DryBulb Offset	Outdoor Air Temperature Sensor Outdoor Air Humidity Sensor
Dry Bulb	OA Temp < [Economizer Outdoor Air Enable Setpoint BAS - Economizer Dry Bulb Enable Offset]	Outdoor Air Temperature Sensor
Differential Dry Bulb	OA Temp < RA Temp - Economizer Dry Bulb Enable Offset - Economizer Dry Bulb Disable Return Air Offset	Outdoor Air Temperature Sensor Return Air Temperature Sensor

Reference Enthalpy Settings

Economizer enthalpy changeover is field selectable and has a range of 50-140°F. The default is 60°F. This selection can be made using the Symbio™ service and installation mobile app or Symbio™ 700 on-board UI.

Wiring Connections

Refer to main unit schematic sheet 6 for electrical connections to Fresh air module located in return section control box, See Figure 9, p. 9.

After installation is complete, the Symbio™ 700 UC configuration will need to be updated to enable this installed feature. Refer to ACC-APG002*-EN.

Figure 9. Fresh air options module location

Fresh air options module access (B and C cabinet)

Fresh air options module access (D cabinet)

Notes

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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(NEW)