

## Installation Instructions

# 0-100% Horizontal Dry Bulb Economizer

Voyager™ Light Commercial  
12.5 - 25 Tons

**Model Number: Used With:**  
BAYECON091\* T/YSH150  
BAYECON092\* Used With T/YSH155, 175, 180, 200, 210, 211, 240, 250, 300, 301  
T/YHH150-300  
WSH150, 155, 180, 200, 240  
T/YZH150-210

### 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.

April 2021

ACC-SVN79M-EN

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## 1 Warnings, Cautions, and Notices

Read this manual thoroughly before operating or servicing this unit. 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

### 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 such as HCFCs and HFCs.

### 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.

## 2 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 electrical codes.

### WARNING

**Personal Protective Equipment Required!**  
Failure to follow recommendations could result in death or serious injury. Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards. Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate SDS sheets and OSHA guidelines for proper PPE. When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations. If there is a risk of arc or flash, technicians MUST put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection PRIOR to servicing the unit.

### 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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## 3

### Trademarks

All trademarks referenced in this document are the trademarks of their respective owners.

### Model Number Description

All products are identified by a multiple-character model number that precisely identifies a particular type of unit. Its use will enable the owner/operator, installing contractors, and service engineers to define the operation, specific components, and other options for any specific unit. When ordering replacement parts or requesting service, be sure to refer to the specific model number and serial number printed on the unit nameplate.

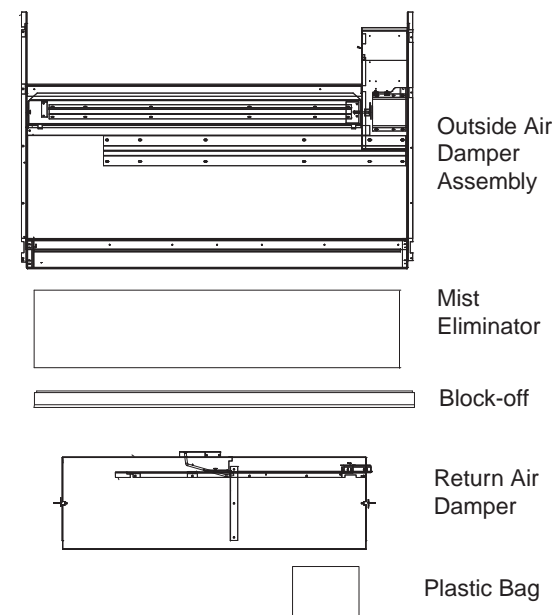
### Inspection and Parts

#### Inspection

- Unpack all components of the kit.
- Check carefully for any shipping damage. If any damage is found it must be reported immediately and a claim made against the transportation company.
- 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.
- If concealed damage is discovered, stop unpacking the shipment.
- 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.
- 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.

## 4 Important: Do not attempt to repair any damaged parts until the parts are inspected by the carrier's representative.

Figure 1. Major economizer components



## 5 Parts List

Each economizer ships partially assembled. 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 un-crated, locate the following parts:

- 1 Outside air damper assembly (with wire harness)
- 1 Return air damper assembly (secured to economizer frame by two shipping screws)
- 1 Mist eliminator
- 1 Block-off
- Plastic bag of miscellaneous parts:
  - Screws
  - Supply air temperature sensor
  - 1 Edge protector
  - Installation and operation manual
  - Rubber grommet
  - Pop-in wire ties
- Verify all of the parts are available for installation.

### Field Supplied Part

#### NOTICE

**Corrosion Damage!**  
Use of non-recommended caulking/sealant could cause corrosion related failures to refrigeration components.

- 1 Tube Sealant - Trane recommends Sikaflex 221 (SEL00439)

## 6 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.

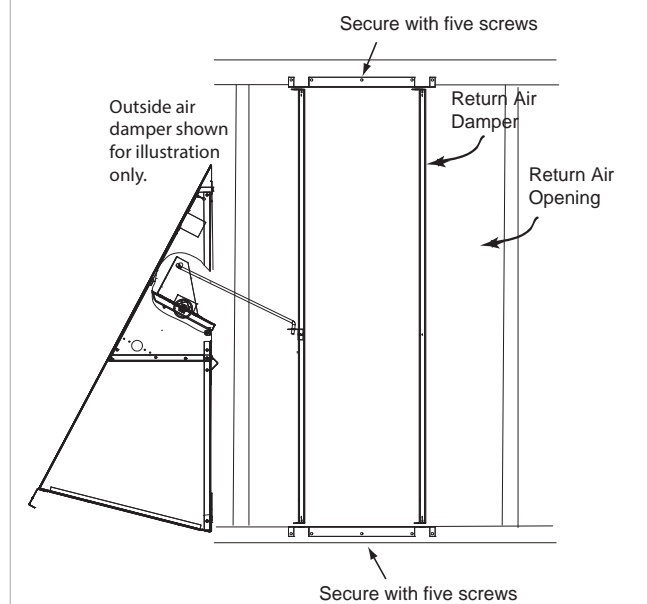
For additional information regarding the safe discharge of capacitors, see PROD-SVB06\*-EN.

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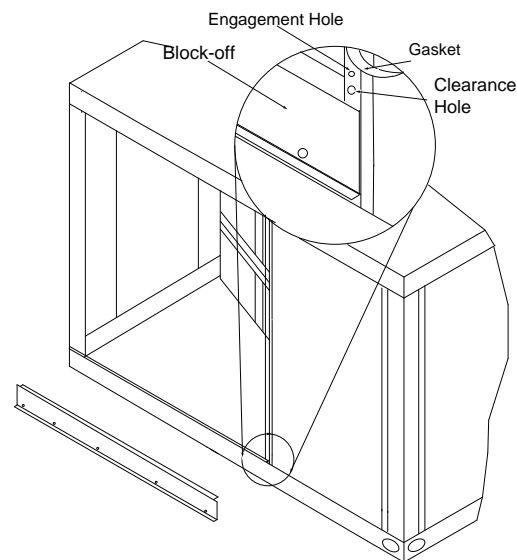
- Remove the filter/fan compartment access panel.
- Remove the unit end panel (evaporator end).
- The return air damper, blockoff and bag of loose parts are secured to the damper and shipping crate. Remove the two screws securing the return air damper to the outside air damper. Remove screws securing the blockoff to the shipping crate. Remove bag of loose parts.
- Place the return air damper assembly into the return air opening. Align holes in the top and bottom damper brackets with existing engagement holes in the top and bottom of return air opening. Secure damper in place with screws provided.

## 7 Figure 2. Return air damper assembly, return air opening



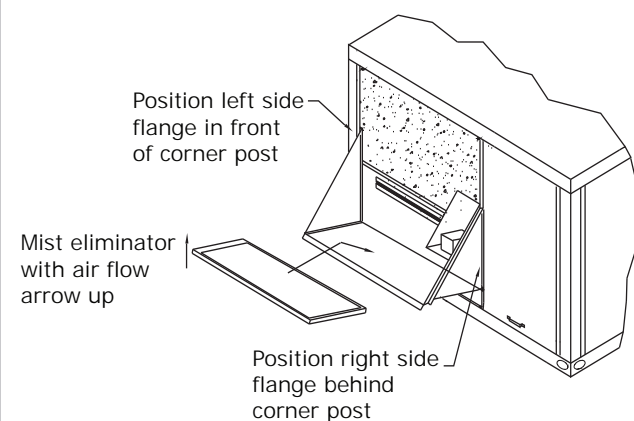
- Install the block-off. The block-off is designed to close the opening created, between the economizer and the base.
- Holding the block-off with the holes at the bottom and the bottom angle outward press the bottom of the block-off against the unit and line up the holes. Using the provided screws, secure it into place.
- Remove approximately 3-inch of gasket material from the bottom of each corner post to expose the holes used to attach the damper assembly to the unit.

Figure 3. Block-off installation



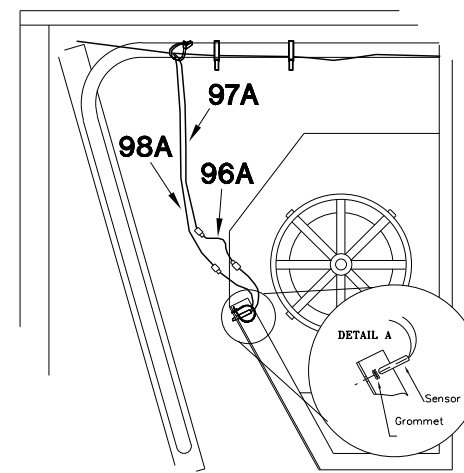
8. Place the outside air damper assembly into the opening with the back right flange behind the corner post flange. Position the left side flange of the outside air damper in front of the corner post flange.
9. With the screws provided, secure the bottom right hand side of the outside air damper assembly by inserting the screws, through the clearance holes in the corner post, into the engagement holes in the outside air damper assembly.
10. Secure the bottom left hand side of the outside air damper assembly by inserting the screws, through the clearance holes in the damper assembly, into the engagement holes of the corner post.

Figure 4. Assembly placement



11. Attach the return air blade brackets/linkage to the outside air damper with the screws provided.
12. Manually hand operate the dampers, slowly, to ensure no binding exists.
13. Install the rubber grommet, provided with the sensor, into the hole on the fan assembly channel.
14. Insert the mixed air sensor through the grommet, approximately one-half inch, with the end pointing toward the coil.

Figure 5. Rubber grommet placement



15. Locate wires 97A and 98A. Wire 96A will be wire tied to them. Connect mixed air sensor to wiring.

**Important:** When unit is equipped with a TCI (Communication Interface), the mixed air sensor must be located downstream of the heat source for a true reading, and to utilize the "supply air tempering" feature. This requirement also applies when the unit is used with any Integrated Comfort™ System (ICS) device such as Tracker™, Tracer®, or ComforTrac™.

16. Install the mist eliminators with the directional arrow pointing up. Loosen the screws holding the mist eliminator angles and adjust them to hold the mist eliminators in position. Tighten the screws. See figure 4.

**Note:** Ensure the directional arrow on the mist eliminator is pointing in the same direction as the airflow.

## Wiring Connections

Locate unit wiring harness plug P8 (wires 55, 54, 56, 57) located at the end of the wiring raceway in the return air section. Pass harness through bushing. Plug P8 into J7 on the economizer actuator motor. Pull harness slack through harness, harness slack should be outside the RTEM compartment (wires hanging down for drip loop). Apply butyl tape to harness / bushing connections. Apply butyl tape outside RTEM compartment.

Locate unit wiring harness plug P13 (Wires 97A and 98A) located at the end of the wiring raceway in the return air section. Route through the star bushing into the return air section. Plug P13 into J13 (MAT) on the economizer actuator motor.

Figure 6. Routing RTEM harness

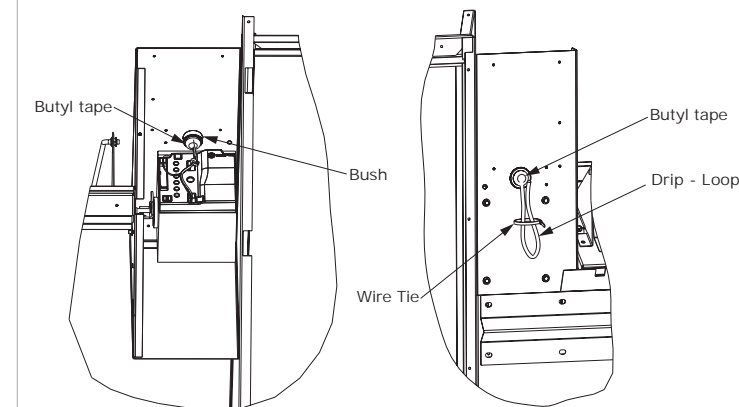
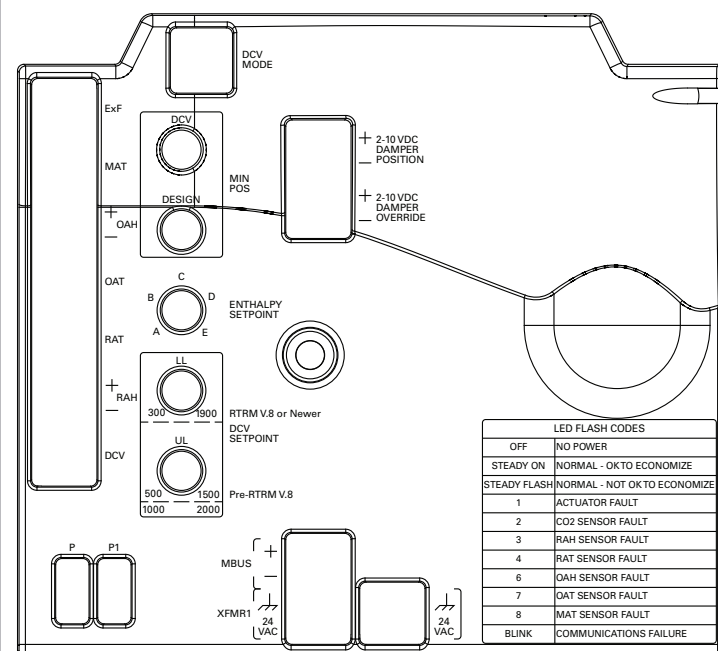


Figure 7. RTEM terminal identifications



**Note:** If Options Module (RTOM) is not installed then connect plug PPF5 to J4 on the Refrigeration Module (RTRM) in the control box.

Replace the control box cover and the compressor access panel.

17. Install the end panel, removed in Step 2, onto the economizer as follows:
  - a. Bend the top of the end panel, at the crease line, outward to approximately 45 degrees.

- b. Place the end panel over the economizer and slide the top of the panel under the roof panel. Replace the screws along the top.
- c. While pushing in at the crease in the end panel, reinstall the two screws along each side above the crease in their original location.
- d. Align the upper row of three screw holes with the holes in the bottom of the economizer frame.

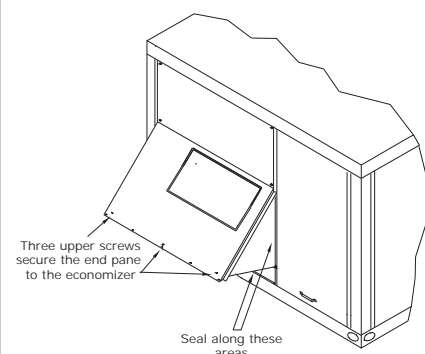
**Note:** Do not use the original five lower screw holes in the end panel. 18. Using the field provided sealant, seal along each side, bottom, and any other areas that could be a potential air and water leak. See figure 8.

## NOTICE

**Corrosion Damage!**  
Use of non-recommended caulking/sealant could cause corrosion related failures to refrigeration components.

19. Replace the filter/fan access panel.
20. Complete the setup and checkout procedures in the Minimum Position Settings section.

Figure 8. Economizer alignment



## Minimum Position Setting

1. To adjust the minimum position setting and check out the economizer, the power must be connected.
2. 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.
3. To adjust the minimum position setting for the required ventilation air, turn the potentiometer (on the ECA) clockwise to "open" (to increase the amount of ventilation) or counterclockwise to "close" (to decrease the amount of ventilation). The damper will open to this setting each time the blower circuit is energized.
4. 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.
5. Replace the filter access panel.
6. The damper will close when the blower circuit is de-energized.

## Dry Bulb Settings

Standard economizer dry bulb changeover is field selectable to five outdoor temperatures. See the below table for potentiometer settings. The selection is made on the ECA.

## Reference Enthalpy Settings

Economizer enthalpy changeover is field selectable to five points. See the below table for potentiometer settings. The selection is made on the ECA.

Table 1. Potentiometer settings

Potentiometer Setting	Dry Bulb	Enthalpy
A	73°F (22.8°C)	27 Btu/lb (63 kJ/kg)
B	70°F (21.1°C)	25 Btu/lb (58 kJ/kg)
C <sup>(a)</sup>	67°F (19.4°C)	23 Btu/lb (53 kJ/kg)
D	63°F (17.2°C)	22 Btu/lb (51 kJ/kg)
E	55°F (12.8°C)	19 Btu/lb (44 kJ/kg)

(a) Factory Setting

Trane and American Standard create comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit [trane.com](http://trane.com) or [americanstandardair.com](http://americanstandardair.com).

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