

Installation Instructions

0-100% Horizontal Dry Bulb Economizer

Model Number: BAYECON091A, BAYECON092A
Used With: TC/YCH150F, TC/YCH155F, 175F, 180F, 200F, 210F, 240F, 250F, 300F, TC/YCH 151E, 181E, 211E, 241E, 301E, WCH150E, 155E, 180E, 200E, 240E

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.

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ACC-SVN79D-EN

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Cautions, Warnings and Notices

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 may 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 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. 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.

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WARNING

Personal Protective Equipment Required!

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 MSDS sheets and OSHA guidelines for proper PPE. When working with or around hazardous chemicals, ALWAYS refer to the appropriate MSDS 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. Failure to follow recommendations could result in death or serious injury.

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 & Parts

Inspection

1. Unpack all components of the kit.
2. Check carefully for any shipping damage. If any damage is found it must be reported immediately and a claim made 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.

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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.

Figure 1. Major economizer components

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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 un-crated, locate the following parts:

- 1 Outside air damper assembly (with wire harness)
- 1 Return air damper assembly (secured to economizer frame by 2 shipping screws)
- 1 Mist eliminator
- 1 Block-off
- Plastic bag of miscellaneous parts:
 - Screws
 - Supply air temperature sensor
 - 1 Tube of sealant
 - 1 Edge protector
 - Installation and operation manual
 - Rubber grommet
 - Pop-in wire ties
- Verify that all of the parts are available for installation.

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Installation

WARNING

Hazardous Voltage w/Capacitors!

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 an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

WARNING

Proper Field Wiring and Grounding Required!

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. Failure to follow code could result in death or serious injury.

1. Remove the filter/fan compartment access panel.
2. Remove the unit end panel (evaporator end).
3. The return air damper, blockoff and bag of loose parts are secured to the damper and shipping crate. Remove the 2 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.
4. Place the return air damper assembly into the return air opening as illustrated in Figure 2. 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.

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Figure 2. Return air damper assembly, return air opening

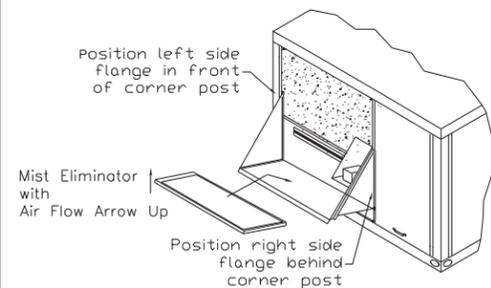
5. Install the block-off as illustrated in Figure 3. The block-off is designed to close the opening created, between the economizer and the base.
6. Holding the block-off with the holes at the bottom and the bottom angle outward press the bottom of the block-off against the unit and line up the holes.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

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Figure 3. Block-off installation

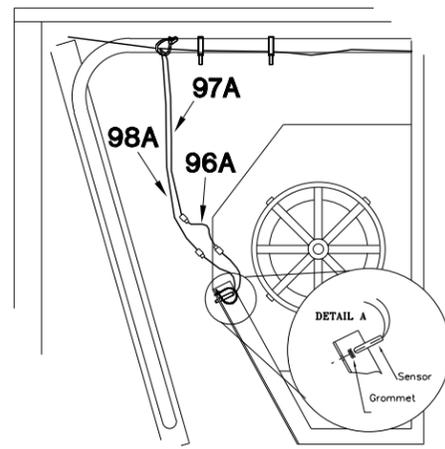
8. Place the outside air damper assembly into the opening with the back right flange behind the corner post flange, as illustrated in Figure 4. Position the left side flange, of the outside air damper in front of the corner post flange.
9. With the screws provided, secure the bottom right hand side of 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, as illustrated in Figure 3.
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, as illustrated in Figure 5 Detail A.
14. Insert the mixed air sensor through the grommet, approximately one half (1/2) inch, with the end pointing toward the coil, as illustrated in Figure 5.

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. See Figure 5.

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. Refer to Figure 4.

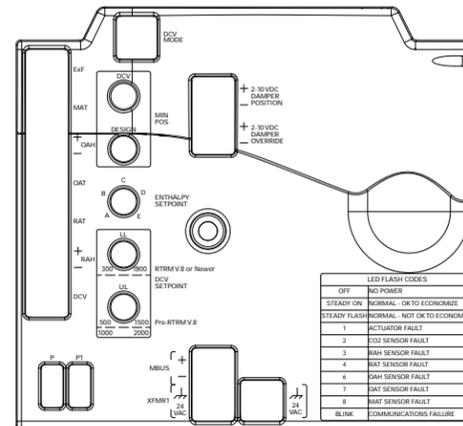
Note: Ensure the directional arrow on the mist eliminator is pointing in the same direction as the airflow.

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. Route through the star bushing into the return air section. Plug P8 into J7 on the economizer actuator motor.

Locate unit wiring harness plug P13 (Wires 97A & 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. 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.

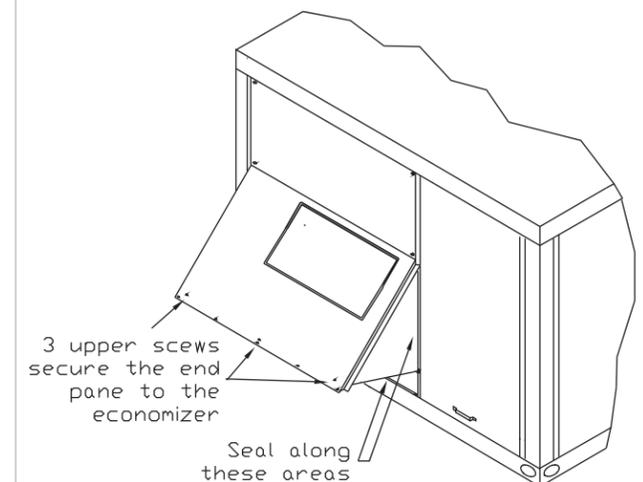
- b. Place the end panel over the economizer and slide the top of the panel under the roof panel. Replace the screws along the top.
- c. While pushing in at the crease in the end panel, reinstall the two (2) screws along each side above the crease in their original location.
- d. Align the upper row of three (3) screw holes with the holes in the bottom of the economizer frame, as illustrated in Figure 7.

Note: Do not use the original 5 lower screw holes in the end panel. 18. Using the sealant that shipped with the economizer, seal along each side, bottom, and any other areas that could be a potential air leak, as illustrated in Figure 7.

19. Replace the filter/fan access panel.

20. Complete the setup and checkout procedures in the "Minimum Position Settings" section.

Figure 7. 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 4 outdoor temperatures. See Table 1 for potentiometer settings. The selection is made on the ECA.

Reference Enthalpy Settings

Economizer enthalpy changeover is field selectable to 4 points. See Table 1 for potentiometer settings. The selection is made on the ECA.

Table 1. Potentiometer settings

Potentiometer Setting	Dry Bulb	Enthalpy
A	73°F ^(a) (22.8°C)	27 Btu/lb (63 kJ/kg)
B	70°F (21.1°C)	25 Btu/lb (58 kJ/kg)
C	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

The manufacturer optimizes the performance of homes and buildings around the world. A business of Ingersoll Rand, the leader in creating and sustaining safe, comfortable and energy efficient environments, the manufacturer offers a broad portfolio of advanced controls and HVAC systems, comprehensive building services, and parts. For more information, visit www.IRco.com.

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