Installation Instructions

Low Ambient Control

Foundation™ Packaged Rooftop Units
3 to 5 Tons

Model Number: BAYLOAM340*

Used With: E/GBC036-060

⚠ 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 2020 **ACC-SVN186C-EN**

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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.

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⚠ 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!

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

⚠ 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.**

Inspection

Remove the contents of the kit from the shipping package and inspect for possible damage. If the accessory has been damaged, it should be reported to and claims made against the transportation company immediately. Any

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missing parts should be immediately reported to your supplier and replaced with authorized parts only.

Introduction

This instruction covers installation of the low ambient kit on E/GBC036-060 units.

Parts List

- 1 Speed Controller
- 1 LPCO Bypass Timer
- 2 Temperature Sensor
- 4 Screws
- 2 Wire Harnesses
- 5 Wire Ties
- 1 Gasket
- 1 Installers Guide
- 1 Installed Accessory Label

Installation

General

Table 1. Electrical and temperature ratings

Volts, AC	208, 240, 380, 415, 480, 600
Control Voltage	18-30 VAC
Frequency	50-60 Hz
Operating Temperature	-40ºF + 140ºF (-40ºC to 60ºC)
Full Load Amps	10 Amps

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Controller

⚠ 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.*

1. Prepare the unit for installation.
   a. Disconnect all power from the unit.
   b. Remove the compressor and control box access panel(s).
2. Refer to Figure 1 to determine the mounting location and position of the controller inside the unit.
3. Mount the controller in the appropriate position using two screws as shown in Figure 1detail A.
4. Mount the bypass timer in the appropriate position as shown in Figure 1 detail B.
5. Mount the ambient air sensor below control box to measure ambient temperatures as shown in Figure 2.

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Figure 1. 3 - 5 ton unit control box

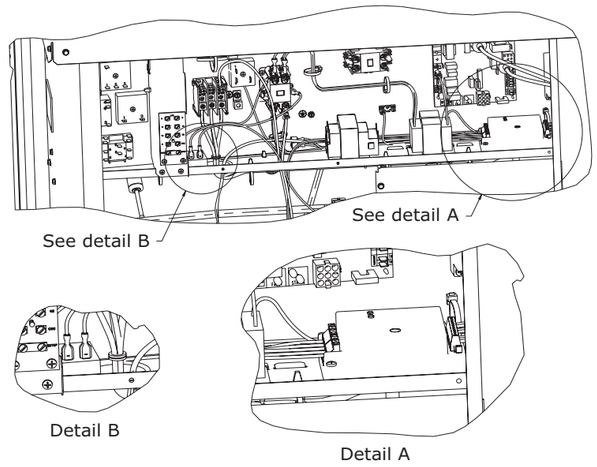

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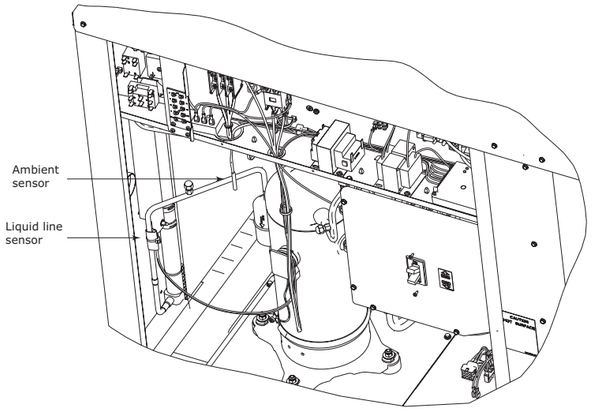
Figure 2. Sensors location



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Control Box Wiring

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1. Following the unit schematic, make all indicated connection in unit control box. See unit schematic located on compressor access panel.
   a. Route temperature sensor to OD coil as shown in Figure 2. Leads on sensor must exit downward, once sensor is attached to the liquid line.
   b. Secure to liquid line, wrap with tape provided, and secure with one wire tie.
   c. Cut wire ties, if necessary, to properly route wires.
2. Finish wiring installation
   a. Using wire ties, bundle and dress any excess wires.
   b. After the settings have been properly adjusted (see "Controller Settings"), reinstall the compressor and control box access panels and secure with screws that were removed.
   c. Re-connect all power to the unit. Refer to troubleshooting guide, Table 2, if needed.

Figure 3. Low ambient wiring diagram

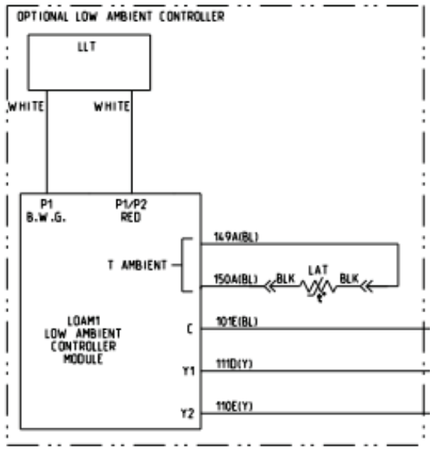
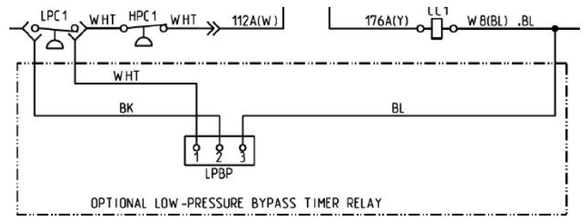


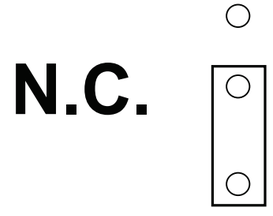
Figure 4. Optional low-pressure bypass timer delay diagram



Controller Settings

For non-heat pump applications, the heat pump select jumper must be in the default (N.O.) position, and the HP terminals must be left unconnected. See Figure 5.

Figure 5. Jumper position



Controller Operation

This electronic control is used on an air conditioner system to reach and maintain head pressure within an acceptable range when ambient

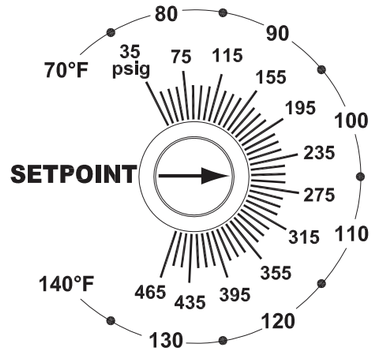
temperature falls below 50°F. It turns on and off the outdoor fan motor to maintain discharge pressure at the selected set point.

Setting the Pressure Setpoint

The pressure setpoint should be adjusted to 250psig initially. Monitor the condenser discharge pressure and adjust the pressure setpoint so the condenser fan operates at full speed when the ambient temperature is greater than 50°F and modulates speed when the ambient temperature is below 50°F.

Note: *There is no exact correlation between dial temperature and pressure scales on the control.*

Figure 6. Pressure setpoint



Troubleshooting

Before leaving the installation, observe for correct operation through the desired pressure range.

Table 2. Troubleshooting guide

Problem	Possible Cause	Possible Solution
No fan operation	No 24 volt control voltage	Check for 24 VAC at control and verify correct wiring. If wired correctly, check voltage across the transformer.
	No line voltage	Check voltage across the black and purple OD motor wires. If no line voltage is present, verify all wiring is correct.
Improper fan operation	Heat pump jumper not configured correctly	Refer to the IOM or correct hook-up diagram and verify the heat pump jumper is configured correctly.
	Control is not wired correctly	See wiring diagrams. Ensure that the 24 VAC power supply is connected in-phase with the motor power supply.
No fan modulation	No need to modulate the fan	If pressure is equal to or greater than the head pressure control setpoint, the fan will be operating at full speed.
	Mis-wired	Check that the 24VAC signal is wired up correctly inside the controller.
Erratic fan operation	Control is not wired correctly	See wiring diagrams.
	Dirty or blocked condenser coil	Clean condenser coil.
Fan motor is cycling on thermal overload	Dirty or blocked condenser coil	Clean condenser coil.
	Wrong motor for fan speed control application	Verify new motor was installed. Replace with motor approved for fan speed control application.

Table 2. Troubleshooting guide

Problem	Possible Cause	Possible Solution
Unit fails to start	Incorrect/No voltage present	Using an AC voltmeter, measure the voltage between the 24VAC terminals. It should read approximately 24 volts. Measure the line voltage between LINE1 and LINE2 to confirm that line voltage is present.
The fuse is blown and/or signs of damage on the unit	Mis-wired	The unit has been mis-wired and may be permanently damaged

Table 3. Temperature vs. resistance

°C	°F	Resistance (KΩ)
0	32	32.7
5	41	25.4
10	50	19.9
15	59	15.7
20	68	12.5
25	77	10.0
30	86	8.1
35	95	6.5
40	104	5.3
45	113	4.4
50	122	3.6

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