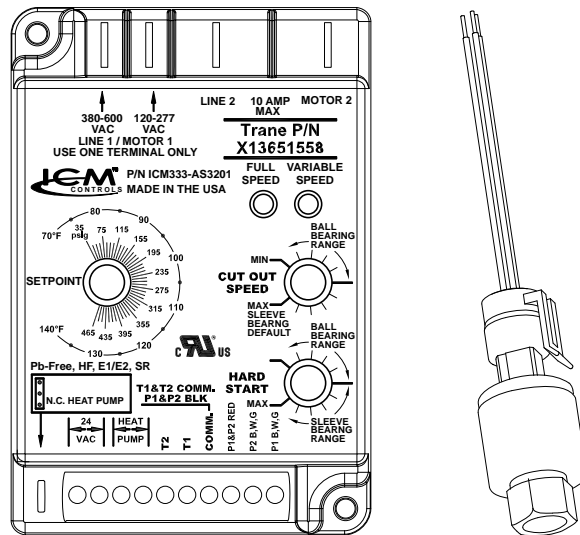


Installation Guide

Head Pressure Control Kit

Odyssey Split System Cooling, 6 to 7.5 Tons

BAYLOAM337: TTA07243D,
TTA09043D
BAYLOAM437: TTA0604DD,
TTA07244D, TTA0764DD,
TTA09044D



⚠ 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.

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:



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



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 Labelling 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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Pre-Installation

General Information

See [Table 1, p. 5](#) for match-up of Head Pressure Control with unit model and voltage. Then refer to the corresponding instructions.

Table 1. Head pressure control - unit selection chart

BAYLOAM437	BAYLOAM337
TTA061HD*, TTA073H4*, TTA076HD*, TTA090H4*, TTA0604DD, TTA07244D, TTA0764DD, TTA09044D	TTA073H3*, TTA090H3*, TTA07243D, TTA09043D

Note: An * denotes legacy models.

Table 2. Electrical, temperature and pressure ratings

Volts, AC	208, 240, 380, 415, 480, 600
Control Voltage	18-30 VAC
Frequency	50-60 Hz
Operating Temperature	-40°F + 176°F (-40°C to 75°C)
Full Load Amps	10 Amps
Transducer Pressure Control Range	0-500 psi

Parts List

- (1) Control Box with Controller
- (1) Slinger Clamp
- (1) Replacement Outdoor Motor
- (10) Wire Ties
- (4) Screws (#10-16)
- (1) Hook-Up Diagrams
- (2) Pressure Tap Tee
- (1) 1/4" Quick Connect
- (2) Transducer
- (1) Installation Instructions
- (1) Slinger
- (1) Snap Bushing
- (1) Label 'Installed Accessory'

Installation

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. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. 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*.

⚠ WARNING

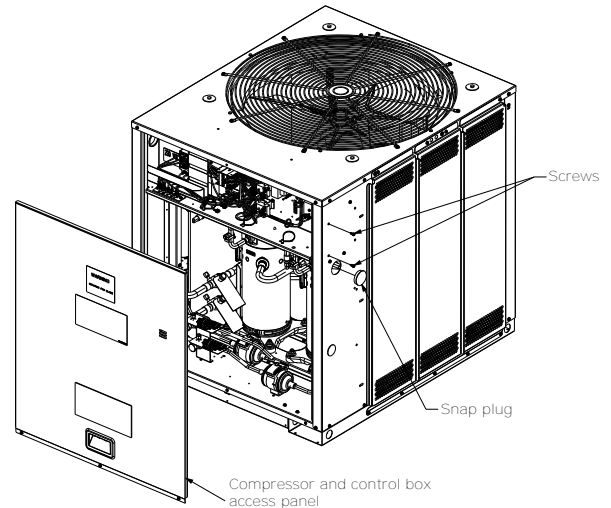
Proper Field Wiring and Grounding Required!

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.

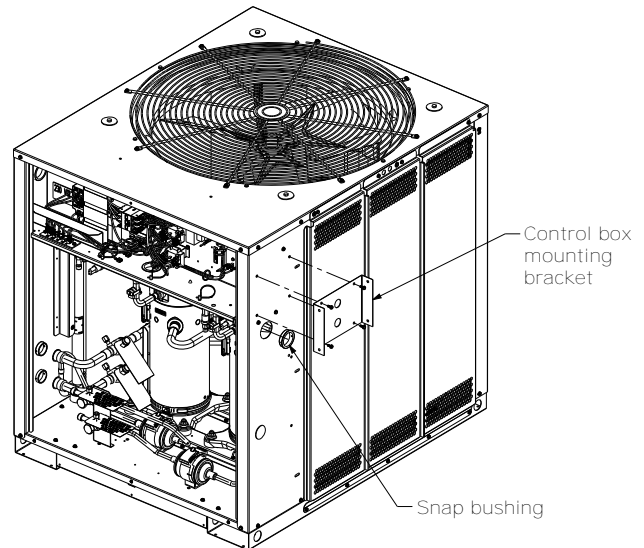
1. Prepare the unit for installation.
 - a. Disconnect all power from the unit.
 - b. Remove the compressor and control box access panel(s).
 - c. Ensure that the capacitor has discharged stored voltage.
 - d. Remove the snap plug and 2 screws from the unit corner post on the right side of the unit (when facing the compressor access panel). See [Figure 1, p. 6](#).

Figure 1. Remove snap plug and screws



- e. Remove the 4 screws that secure the control box mounting bracket to the kit control box and set the control box and mounting bracket to the side.
2. Insert the snap bushing (provided in the kit) into the hole on the corner post. See [Figure 2, p. 6](#).

Figure 2. Secure mounting bracket to unit



3. Using the 4 screws provided in the kit secure the control box mounting bracket to the corner post. See [Figure 2, p. 6](#).

Transducer and Tee

⚠ WARNING

R-410A Refrigerant under Higher Pressure than R-22!

Failure to use proper equipment or components as described below, could result in equipment failing and possibly exploding, which could result in death, serious injury, or equipment damage.

The units described in this manual use R-410A refrigerant which operates at higher pressures than R-22. Use ONLY R-410A rated service equipment or components with these units. For specific handling concerns with R-410A, please contact your local Trane representative.

NOTICE

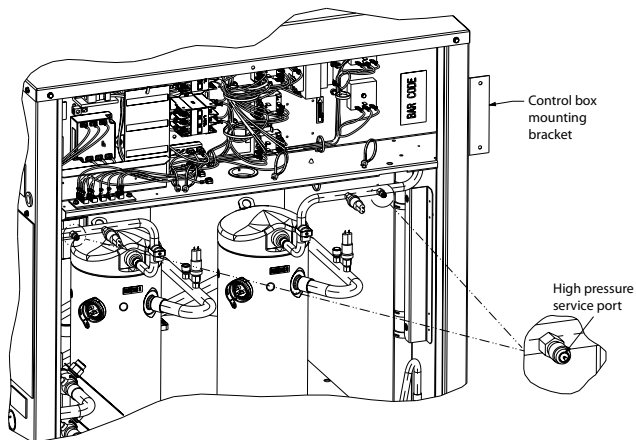
Wire Damage!

Failure to follow instructions below could result in damaged wires.

Use provided wire ties to make sure wire are secured and protected from sharp edges and hot surfaces.

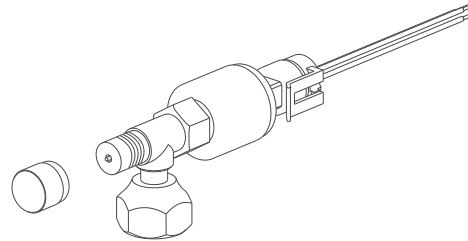
1. Remove cap nut from the unit's high pressure service port on the discharge line that runs from the compressor.

Figure 3. High pressure service port



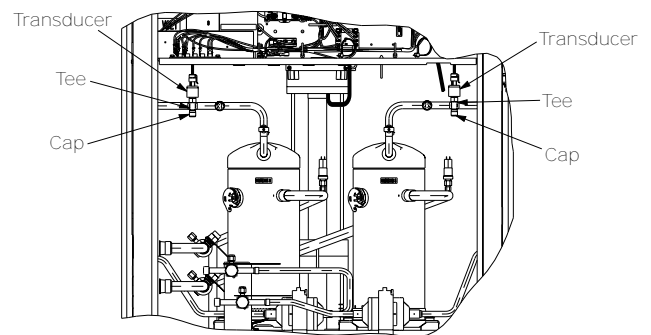
2. Install one transducer onto each Tee port without the valve core and place the cap nut (that was removed from the service port) on to the port with the valve core on each Tee.

Figure 4. Transducer to tee



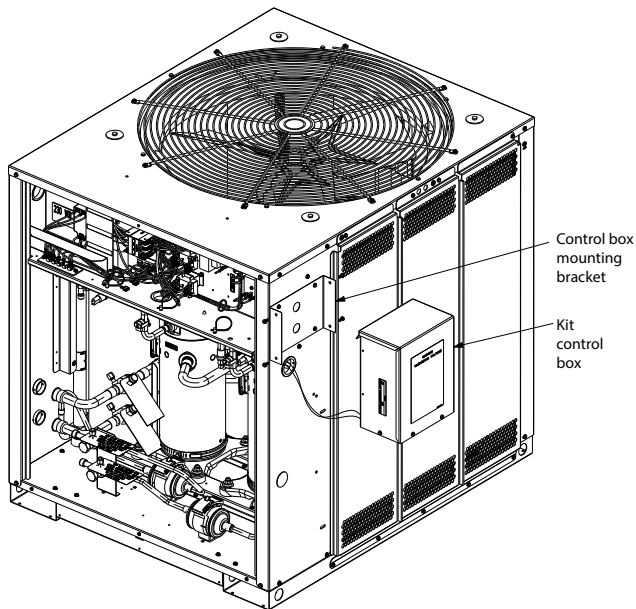
3. Place the Tee flare nut with valve core depressor on the unit high pressure tap, where the cap nut was located.

Figure 5. Transducer and tee installed



4. Tighten flare nut securely to the high pressure service port and check for leaks.
5. Route transducer wires through snap bushing and connector into the kit control box and make connections per hook-up diagram (supplied in kit).
6. After all wires are secured to the head pressure controller and routed through the bushing and connector in the kit control box, tighten connector screws and secure kit control box to the mounting bracket on the unit using the screws that were removed earlier. See [Figure 6, p. 8](#).

Figure 6. Secure kit control box to mounting bracket



Motor

NOTICE

Motor Bearings Damage!

Do not bend fan blades when removing and installing fan motor assembly. Bent blades could cause excessive load on the motor bearings and its subsequent failure.

1. Remove the fan guard.
2. Measure the position of the fan blade on the current motor. The fan blade will need to be reinstalled at the same height on the new motor.
3. Remove the fan blade.
4. Remove and appropriately discard the existing fan motor.
5. Install the new fan motor.
6. Install slinger, making sure it does not press against

the shaft end bearing.

Note: Use slinger clamp if applicable.

7. Reinstall the fan so the fan hub is flush with the end of the motor shaft and torque the fan hub bolt to 165-175 in-lb.
8. Wire motor following unit wiring diagram (see)
9. Reinstall the fan guard and ensure there is one inch between the fan guard and fan prop.

Wiring

NOTICE

Wire Damage!

Failure to follow instructions below could result in damaged wires.

Use provided wire ties to make sure wire are secured and protected from sharp edges and hot surfaces.

ReliaTel Evaporator Defrost Control Function Disable (EDC)

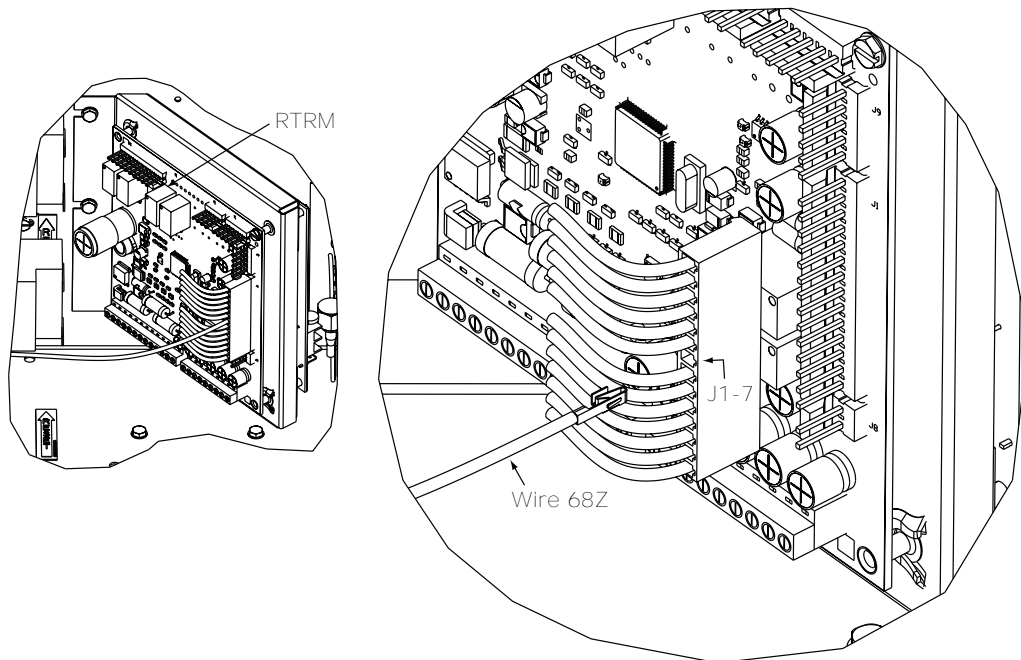
1. Disable ReliaTel™ on-board low ambient function.
2. Connect wire 68Z (BL) (supplied in kit) into the J1-7 pin on jack 1 on the RTRM, see [Figure 7, p. 9](#).

Note: Pay close attention to the orientation of the wire terminal on wire 68Z when inserting it into J1-7 position on the existing wire harness. Verify the wire snaps into place.

3. Route wire 68Z (BL) to the low voltage terminal board (LTB1).
4. Connect wire 68Z (BL) to low voltage terminal board (LTB1) terminal "B".
5. Using wire ties (provided), bundle and dress this wire away from sharp edges.

Important: This wire connection is needed to disable the ReliaTel™ on-board low ambient function. The unit will not work properly unless this function is disabled.

Figure 7. ReliaTel — J1-7 board connection



Control Box Wiring

1. Locate fan terminal block (FTB1) and (FTB2 if applicable), remove and discard the black jumper wire. See unit connection and wiring diagrams on back side of control box access panel.
2. Following the hook-up diagram that corresponds to the unit, make all indicated connections in unit control box. See for corresponding hook-up diagram.

Notes:

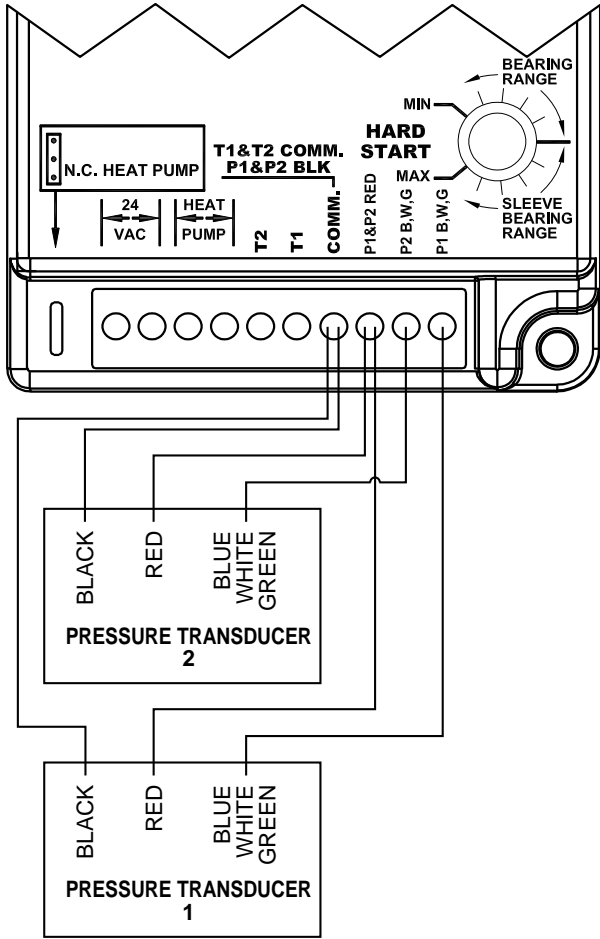
- For TTA0604DD/0724*D/0764DD/0904*D units, two transducers should be used with one controller — in which case the controller will respond to the transducer that senses the highest pressure (see [Figure 8, p. 10](#) for wiring).
- Cut wire ties, if necessary, to properly route wires.

3. Finish wiring installation
 - a. Using wire ties, bundle and dress any excess wires away from sharp edges, moving parts, or hot tubes.
 - b. Apply installed accessory label next to unit nameplate.
 - c. Apply the correct hook-up diagram (supplied in kit) which corresponds to the unit to an open area on the back side of the control box access panel for future reference. See for corresponding diagrams.
 - d. After the settings have been properly adjusted (see [“Controller Settings,” p. 10](#)), reinstall the

compressor and control box access panels and secure with screws that were removed.

- e. Re-connect all power to the unit. Refer to troubleshooting guide, if needed.

Figure 8. Wiring connections for two transducers to one controller

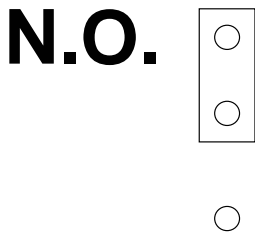


Controller Settings

Jumper Position for TTA Models (Cooling Only)

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 9, p. 10.

Figure 9. Jumper position for TTA



Operation

Upon startup, the motor will hard start for the length of time dictated by the dial setting. After the hard start time has elapsed, the motor speed will be controlled by the transducer reading pressure. When the motor is running at full speed, the green light will turn on.

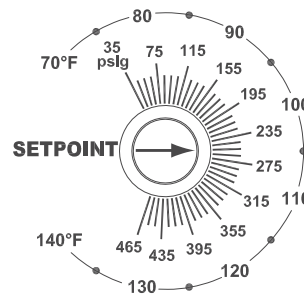
As the sensed pressure decreases, the output voltage will decrease, the green light will turn off and the yellow light will turn on during this motor variable speed. Note that the output voltage may decrease to the determined cutout speed, which is dictated by the cutout speed dial. Upon reaching the cutout speed setting, the output voltage will go to zero volts and the yellow light will turn off and the green light will remain off.

Setting the Pressure Setpoint

When using pressure transducers, the control will maintain condenser pressure between 20psig above and 20psig below dialed pressure setpoint. The dial pressure setpoint range is 35psig to 465psig. 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 75°F and modulates speed when the ambient temperature is below 70°F.

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

Figure 10. Pressure setpoint



Setting the Cutout Speed

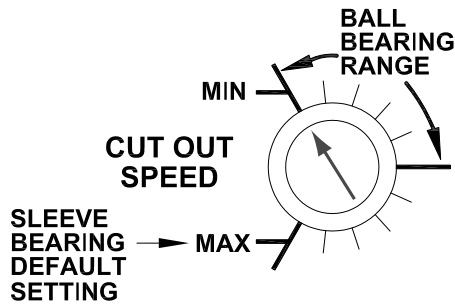
The cutout speed dial adjusts the motor voltage range.

Ball Bearing Motors

Note: Only ball bearing motors are supplied with kit.

Set the cutout speed dial to the MIN position in the ball bearing range. This position offers the greatest range of speed control. At the MIN setting the motor can run down to approximately 20- 30% of the full line voltage.

Figure 11. Cutout speed



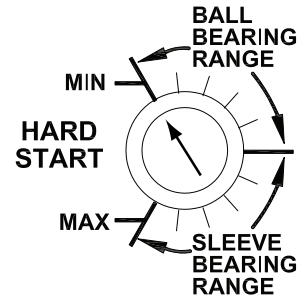
Setting the Hard Start Speed

During the hard start mode, the motor runs at 50% of full capacity for the time dictated by the hard start setpoint. The position of the hard start dial determines the time period of the hard start mode.

The dial can be adjusted between 0.2 seconds and approximately 4 seconds.

Set the hard start dial according to the ball bearing type. For a ball bearing motor, set the hard start dial to the MIN position.

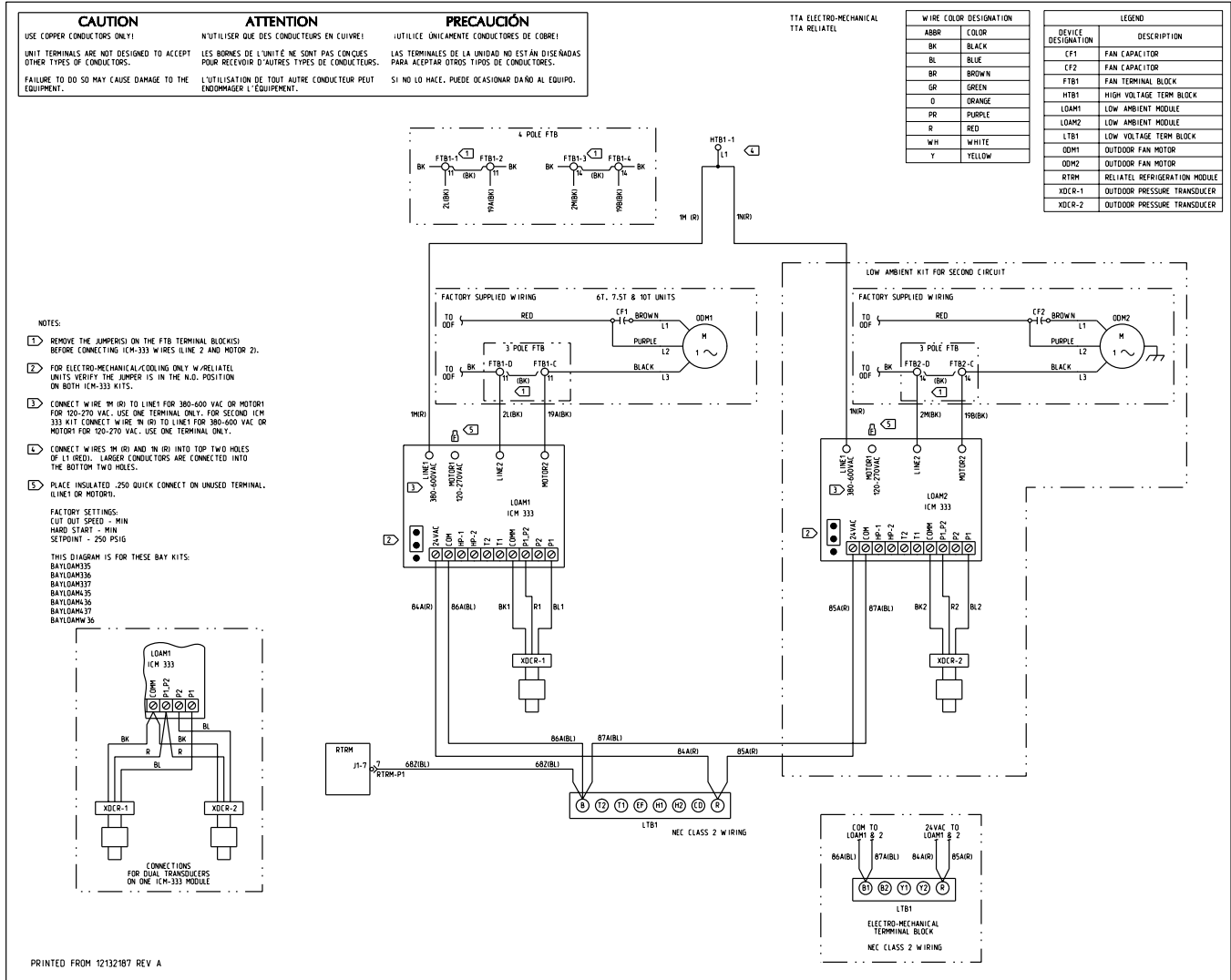
Figure 12. Hard start speed



Begin at the recommended setting - the hard start time can be fine tuned within the recommended motor range. Use the minimum possible hard start time to avoid blowing too much cold air over the condenser. After the hard start period, the motor speed is dictated by the pressure transducer.

Installation

Figure 13. Wiring diagram – TTA cooling with ReliaTel/Electromechanical



Operation & Troubleshooting

Checkout Procedure

Before leaving the installation, observe for correct operation through the desired pressure range (see Table 4, p. 13).

⚠ WARNING
Hazardous Service Procedures!
Failure to follow all precautions in this manual and on the tags, stickers, and labels 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 following instructions: Unless specified otherwise, disconnect all electrical power including remote disconnect and discharge all energy storing devices such as capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. When necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been trained in handling live electrical components perform these tasks.

Table 3. 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.
	Transducer malfunction or not installed	If lights are flashing alternatively, then no probe is connected or the probe is malfunctioning. When using a pressure transducer, with power applied to the control, use a voltmeter to measure volts DC between COMM and P1 or P2, where the wire is connected. The reading should be according to Table 3, p. 13.
The fuse is blown and/or signs of damage on the unit	Miswired	The unit has been mis-wired and may be permanently damaged
The fan cycles from ON to OFF with little or no speed modulation	Improper hard start setting	Reduce hard start setting to minimum needed to accelerate the fan. Excessive hard start causes large pressure drops by running too much cold air over the condenser.
The high pressure switch trips off	Improper head pressure setpoint setting	See unit fails to start above.
		Check the setpoint and reduce it if needed.

Table 4. Pressure vs. voltage

Pressure (psig)	Voltage (Vdc)
0	0.5
50	0.9
100	1.3
150	1.7
200	2.1
250	2.5

Table 4. Pressure vs. voltage (continued)

Pressure (psig)	Voltage (Vdc)
300	2.9
350	3.3
400	3.7
450	4.1
500	4.5

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