Installation Instructions

Split System Air Conditioners Odyssey™

Single Zone VAV to 2-Speed Electromechanical TWE Air Handlers R-410A and Symbio™ (Digit 15 = D)

Model Number: **Used With:**

BAYWRKT510* TWE with R-410A and Symbio™ controls

⚠ 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.

September 2024 **PART-SVN265A-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.

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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General Information

Parts List

⚠ 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.

Table 1. Parts list

Part Number	Supply Part Number	Description	Qty
WIRMID011401	WIR11494	Harness; VFD Pigtail, Two Speed	1
WIRMID011001	WIR11487	Harness; Supply Fan Controls	1
121342350001	–	Schematics; Air Handler, TWE Two Speed Fan (EM Cond)	1
–	–	Installation Instruction Manual - PART-SVN265*-EN	1
X19210028130	WIR07794C	Wire ties	9
X19210284020	–	Wire ties	1
X39004341001	–	TR150 VFD Parameters Label	1
X39004549001	–	Unit Conversion Label	1

VFD and Relay Board Placement

Figure 1. Odyssey R-410A air handler – 6 to 25 tons

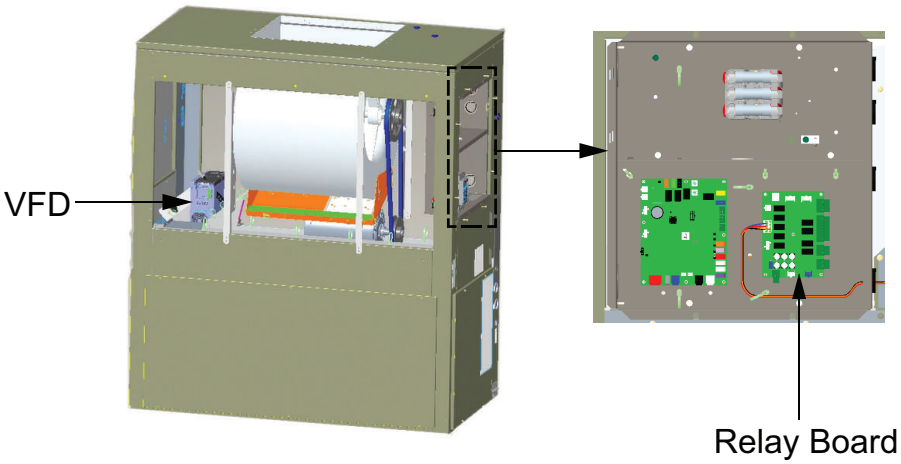


Table 2. Label instructions

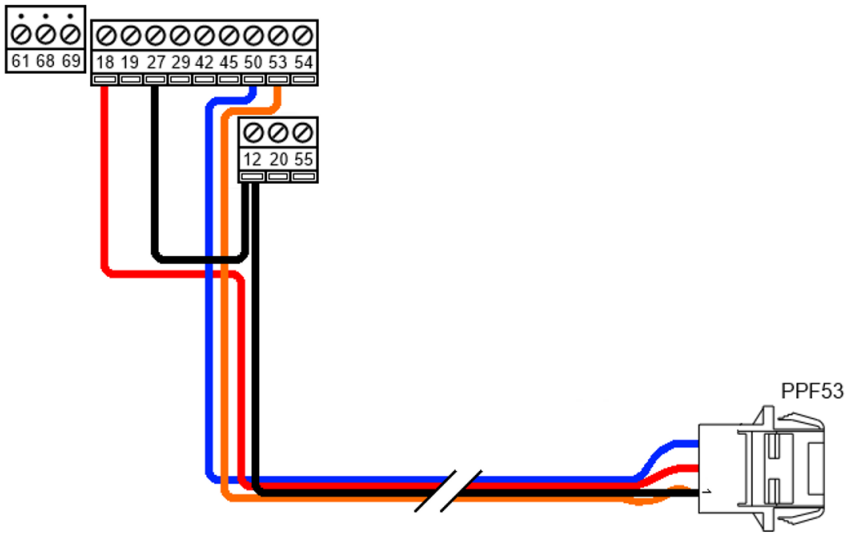
Parameters	Description
VFD Label	Locate the label with new VFD parameters and adhere it on top of the old label.
Unit Conversion Label	Locate the label (Part number: X39004549001) which states, “This unit has been converted to 2-speed airflow for pairing with electromechanical condenser (Model digit 15 = D has been converted to digit 15 = C)” and adhere it close to the nameplate.
Schematic	Locate the AIR HANDLER, TWE-2 SPEED FAN (EM COND) (121342350001) schematic and adhere it on top of existing schematic.

Installation

SZVAV Symbio Air Handler to Two-Speed Air Handler with Electromechanical Condenser Pairing

1. Remove power from the air handler unit and condenser (condenser provides low voltage power to air handler unit).
2. Remove Modbus harness from relay board P1.
3. Remove Modbus harness from VFD 61, 68, and 69.
4. Connect VFD harness (WIRMID011401) to VFD terminals. See Figure 2, p. 6.

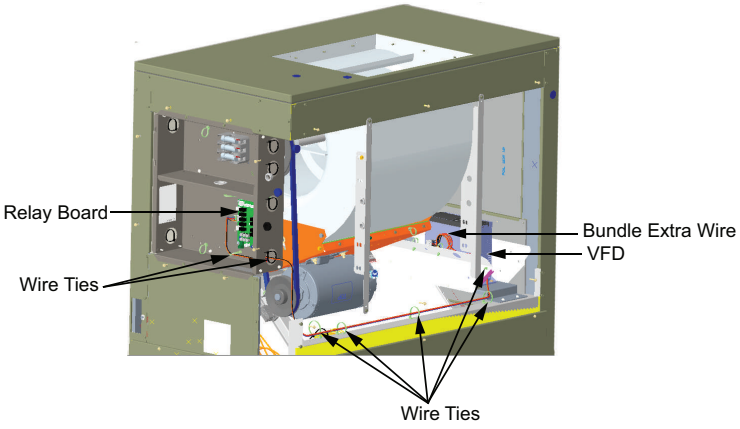
Figure 2. Harness connection to VFD terminals

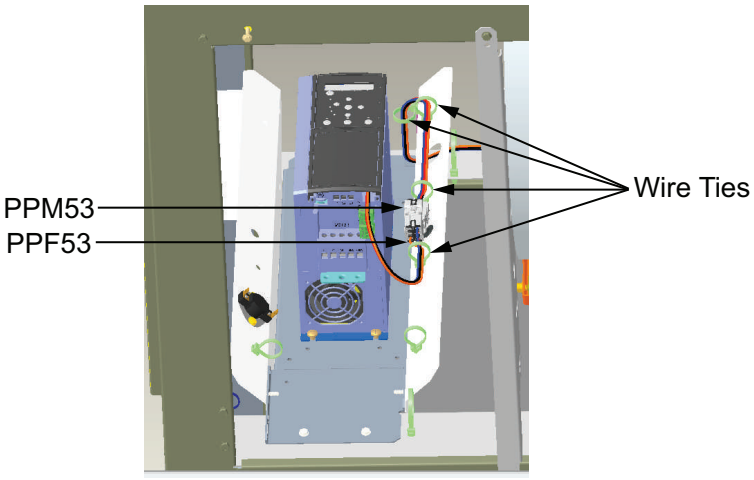


Harness Routing

1. Route VFD harness (WIRMID011001) through unit. See Figure 3, p. 6 and Figure 4, p. 7.
2. Bundle extra length closer to the connector wire tie.

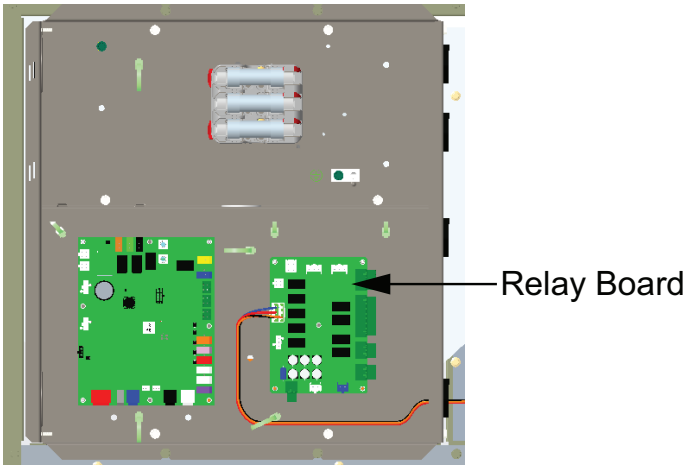
Figure 3. Harness routing from relay board to VFD





3. Connect VFD pigtail harness P11 to relay board J11.

Figure 4. Harness routing and connection to relay board



4. Connect VFD pigtail harness PPM53 to VFD harness PPF53.
5. Apply power to air handler unit and condenser.
6. Make the following parameter changes to VFD:
   a. Change 3-15 from [11] Local Bus reference to [1] Analog Input 53.
   b. Change 5-10 from [0] No Operation to [8] Start.
   c. Change 5-12 from [0] No Operation to [2] Coast Inverse.
   d. Change 8-01 from [2] Control Word only to [0] Digital and Control Word.
   e. Change 8-02 from [1] FC Port to [0] None.
   f. Verify 4-12 is set to 25 Hz.
   g. Verify 6-10 is set to 0.07 V.
   h. Verify 6-11 is set to 10.00 V.
   i. Verify 6-14 is set to 25 Hz.
   j. Verify 6-15 is set to 60 Hz.
7. Wiring for the air handler unit and thermostat follow Pairing D shown in *Split System Air Conditioners Odyssey™ with Symbio™ Controls for R-410A Installation Guide (SS-SVN016*-EN)*.

Units with Electric Heat

1. Remove the electric heat wiring between options module and relay board P1.
2. Remove IMC connection from options module P5 and relay board J2.
3. Remove remaining connectors from options module and remove options module.

Air Handler Unit Placement

Figure 5. New label and schematic placement on air handler

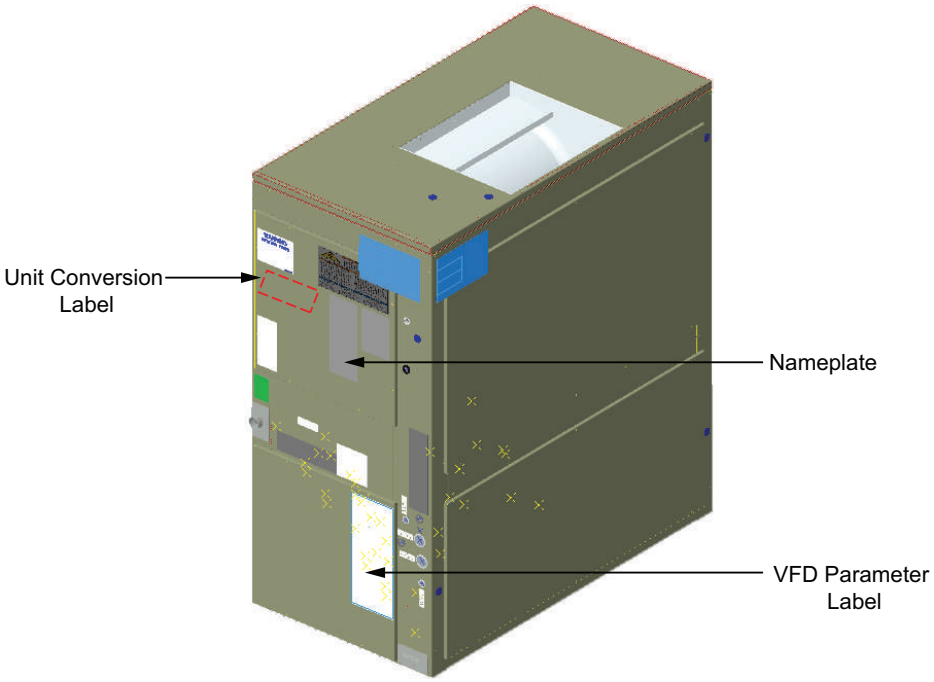


Table 3. Label instructions

Parameters	Description
VFD Label	Locate the label (Part number: X39004341001) with new VFD parameters and adhere it on top of the old label.
Unit Conversion Label	Locate the label (Part number: X39004549001) which states, “This unit has been converted to 2-speed airflow for pairing with electromechanical condenser (Model digit 15 = D has been converted to digit 15 = C)” and adhere it close to the nameplate.
Schematic	Locate the AIR HANDLER, TWE-2 SPEED FAN (EM COND) (121342350001) schematic (supplied with the conversion kit) and adhere it on top of existing schematic.

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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Supersedes (New)