LIGHT COMMERCIAL TECH SUPPORT
ODYSSEY SYMBIO ™ 700 Phone APP & Wiring Guide

⚠ 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.

FEBUARY 2022

Contents

Communication Wire Info.

Note: ***If you have a Symbio Condenser paired with a Symbio Air Handler with Model Number Digit 15 = D (2 Stage Airflow/Single Zone VAV) you must run BOTH Adapter Board J15-3 & 4 to Relay Board J4-3 & 4 and Adapter Board J16-1 & 2 to Relay Board J7-1 & 2 shielded twisted pair!***

Use the correct communication wire to ensure reliable communication between the Condenser and the Air Handler.

Recommended wire Part Number is below.

Other wire may be used if it conforms to the following physical characteristics:

- Twisted pair (2-conductor) plus shield.
- Characteristic Impedance: 100 and 130 ohms.
- Distributed capacitance between conductors: < 100 pF/m.
- Distributed capacitance between conductor and shield: < 200 pF/m.
- Foil or braided shield is acceptable.
- Wire diameter: 22 to 18 AWG.

TRANE PURPLE WIRE Recommended

Part Number	Business Unit	Description
CAB01568	US Manufacture	CABLE; COMLINK CABLE WITH A PVC JACKET, 18/1 PR, STRANDED SHIELD, 25PF PLENUM, 100 FOOT LENGTH

Part Number	Business Unit	Description
CAB01569	US Manufacture	CABLE; COMLINK CABLE WITH A PVC JACKET, 18/1 PR, STRANDED SHIELD, 25PF PLENUM, 1000 FOOT LENGTH

Thermostat / Interconnecting Wire Info.

Recommended thermostat wire size

Wire Size	Maximum Wire Length
(Gauge)	Physical distance between Unit & T'stat
22	30 Feet
20	50 Feet
18	75 Feet
16	125 Feet
14	200 Feet

Part #	Mfg #	AWG/Cond	Length
WIR03774	55308T407	18/8	250'

18 AWG SOL BC Barostat™ II Thermostat Wire with Brown Reels

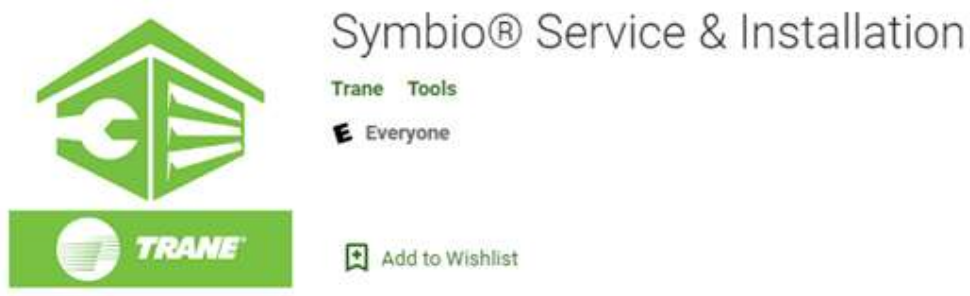
- *UL Listed Type CL2, cUL Listed Type CM or CMH/FTI*

Part #	Mfg #	AWG/Cond	Length
WIR02573	3001820000	18/2	500'
WIR02574	3001830000	18/3	500'
WIR02576	3001850000	18/5	250'
WIR02577	3001860000	18/6	250'
WIR02579	3001880000	18/8	250'
WIR02581	3018100000	18/10	250'

Download the Phone App!

Apple https://apps.apple.com/us/app/symbio-service-installation/id1309310176

Google Play https://play.google.com/store/apps/details?id=com.trane.mobileservicetool



Connection Requirements:
– Mobile Phone must have 'Symbio Service and Installation' Tool installed
– Mobile Phone must have Bluetooth (BLE) 4.2 or later

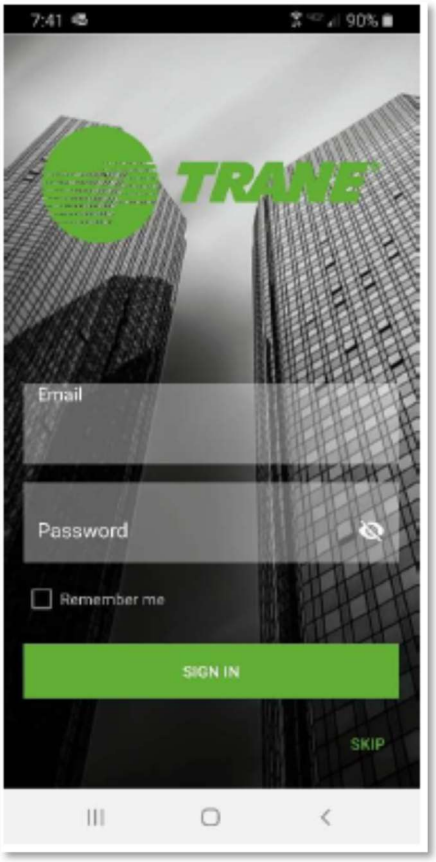
Android V5.0 Lollipop or later *i.e., Samsung Galaxy S7 or newer*

Apple iOS V10; iPhone 6 or newer

Login

Press Skip, go directly to the Unit List without logging in.

Trane personnel can login using their Trane Connect username and password.

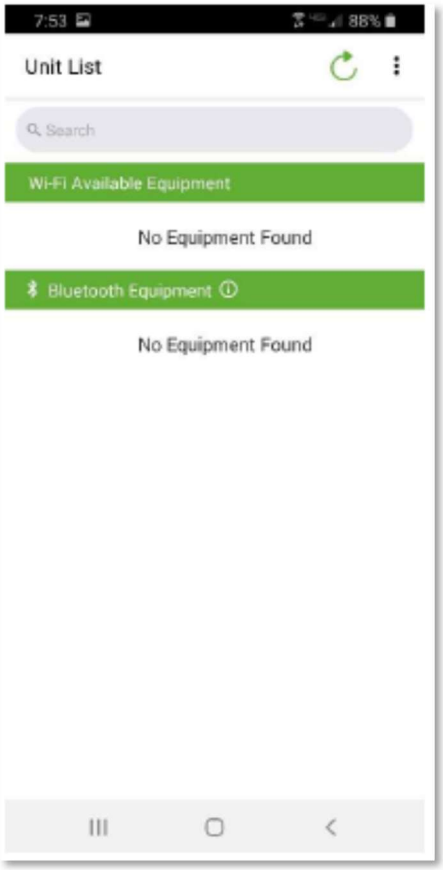


Apple

Android

Unit List

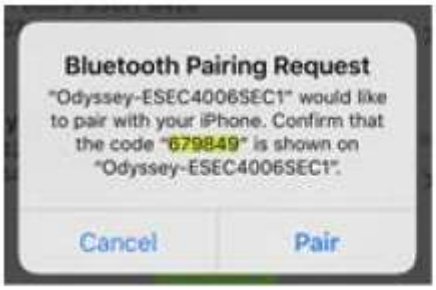
Press the 3 dots in the upper right hand corner for About, Preferences, EULA, Software Notices and Sign In (Preferences is for Language and Units)



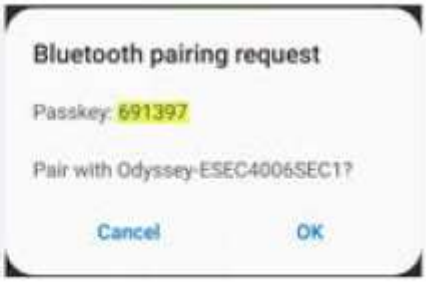
On the Unit List page, select the Symbio 700 controller that you want to pair with.

If the controller is not listed, press the refresh arrow in the upper right-hand corner of the screen.

When prompted, pair the app to the Symbio 700 controller. A popup message displays a 6-digit random number. The same number is shown on the display of the Symbio 700 controller until the pairing is complete, allowing the user to confirm connection to the intended controller.



iOS



Android

Press the ✔ on the Symbio 700 on-board keyboard/display to complete the connection.

The Icons below are for the different screens

Android

HOME SETTINGS STATUS ALARMS TOOLS

Apple

HOME SETTINGS STATUS ALARMS TOOLS

SETTINGS

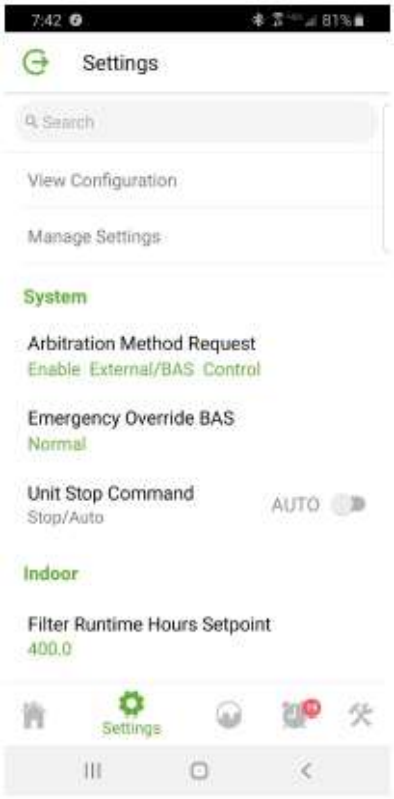
Settings

This page does not auto refresh, to manually refresh swipe down or press refresh

View Configuration

When the EDIT button is pressed the equipment will be stopped

All the values are green, select the one to change



Typically, all you should need to change is…

Space Controller

Primary Heat (or Secondary on a Heat Pump)

Notes:

Evaporator Defrost Control - Compressor off 3 min for 10 min of accumulated runtime if the outdoor air temp. is below 55° for single compressor units, below 40°F for dual compressor units.

Frostat – This is a VFD High Temperature Snap-Disc *(only on units with a VFD)*

Demand Management – Set to Demand Limit if you want to utilize the EDC Switch on the Air Handler Evaporator Coil.

View Configuration Sub-Menu

Equipment Configuration

System Type - VVZT/ CVZT *(VVZT is SZVAV)*

Refrigeration System – Cooling Only, Heat Pump

Refrigerant – R22, R410a

Voltage - 208/230 -60, 380/415-50, 380/60, 460/60, 575/60

Efficiency - Standard

Tonnage - **R-22** - 7.5, 10, 15, 20

R-410A - 6, 7.5, 10, 12.5, 15, 20 (+ 25 for TTA)

Refrigeration Circuit – Single, Dual

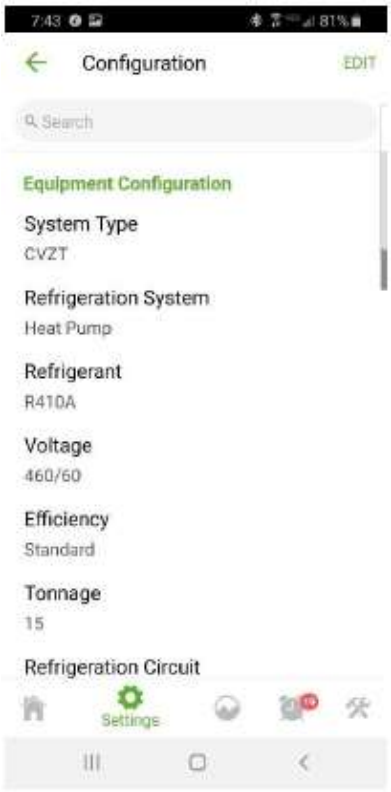
Indoor Fan Type – Single Speed, Multi Speed, Variable Speed

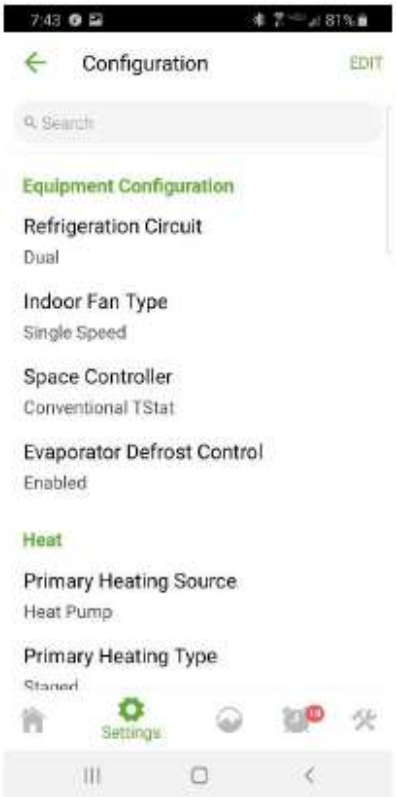
(Variable Speed is the only option on VVZT)

Space Controller – Conventional TStat, Single SP Zone Sensor, Dual SP Zone Sensor

Evaporator Defrost Control – **Enabled**, Not Enabled

(Compressor off 3 min for 10 min of accumulated runtime if the outdoor air temp. is below 55° for single compressor units, below 40°F for dual compressor units)





Heat

Primary Heating Source – Not Installed, Electric, Heat Pump

Primary Heating Type - Staged

Primary Heating Stages – 1,2

Secondary Heating Source – Not Installed, Electric

Secondary Heating Type - Staged

Secondary Heating Stages – 1,2

Optional Devices

Ventilation Override – **set to Not Installed**

External Auto Stop – **set to Not Installed**

Frostat – Installed, Not Installed

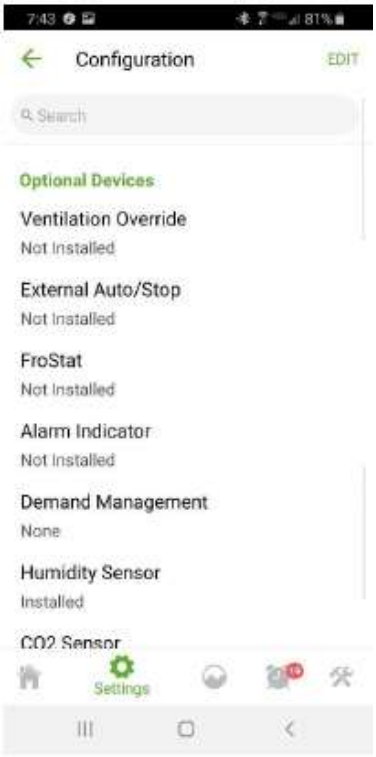
On Indoor Options Module as HTL (a snap disc in the VFD enclosure)

Alarm Indicator - **set to Not Installed**

Demand Management – None, **Demand Limit**, Demand Shed

(*Set to Demand Limit to use EDC Switch on Evap. Coil)*

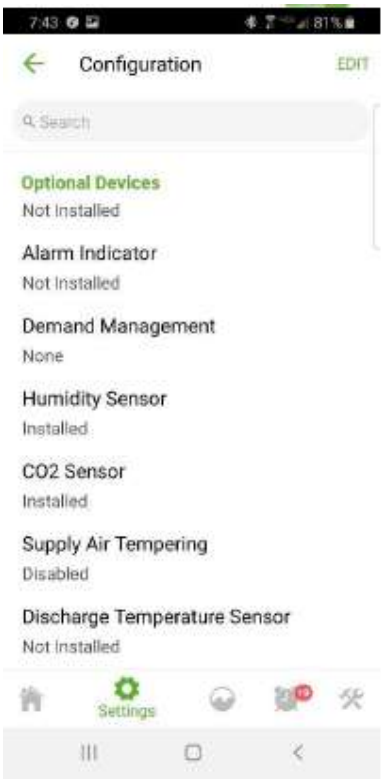
Humidity Sensor – Installed, Not Installed



CO2 Sensor – Installed, Not Installed

Supply Air Tempering – Enabled, Disabled

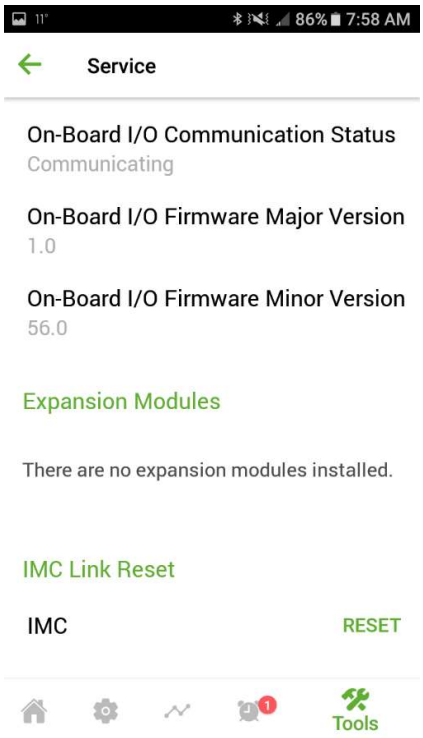
Discharge Air Sensor – Installed, Not Installed



TOOLS, Service

IMC Link Reset

Use this if the address was set wrong on the Indoor Options Board, or the Indoor Options Module is not communicating.



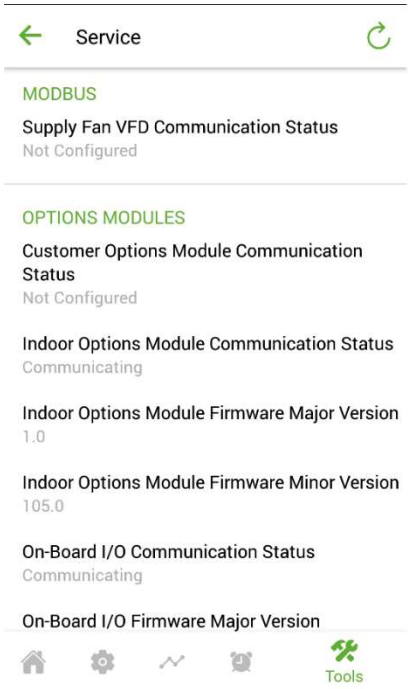
Options Modules

Customer Options Module Communication Status

(should always say Not Configured)

Indoor Options Module Status will say **Not Configured** on units with Non SZVAV Air Handlers or Electric Heat.

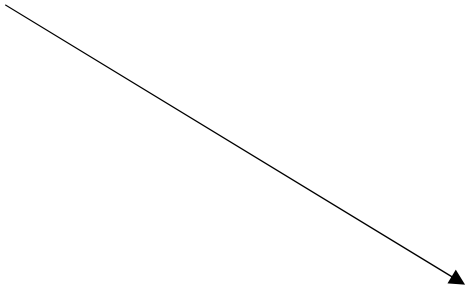
Should say **Communicating** on units with Electric Heat or a SZVAV / Air Handler

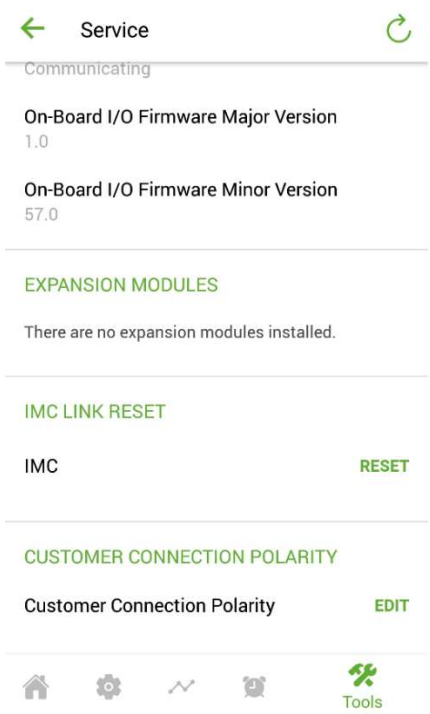


Customer Connection Polarity

This feature is in Tools, Service, then scroll all the way to the bottom.

You can change the operation of the Demand Limit input and the Emergency Stop input with this feature in the Phone App.



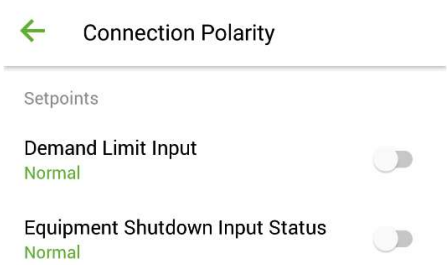


Demand Limit Input (UC J16-2)

If the Demand Limit Input is set to Normal, a 24 VAC input on UC J16-2 will turn off the compressor(s).

If the Demand Limit Input is set to Reversed, a 24 VAC input is needed on UC J16-2 for the compressor(s) to run.

This will allow either a Normally Open EDC coil switch or a Normally Closed EDC coil switch.

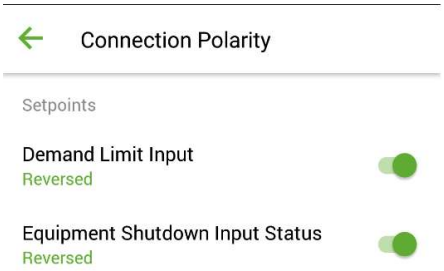


Equipment Shutdown Input Status (UC J18-2)

If the Equipment Shutdown Input Status is set to Normal, a 24 VAC Input on UC J18-2 will immediately shutdown the unit.

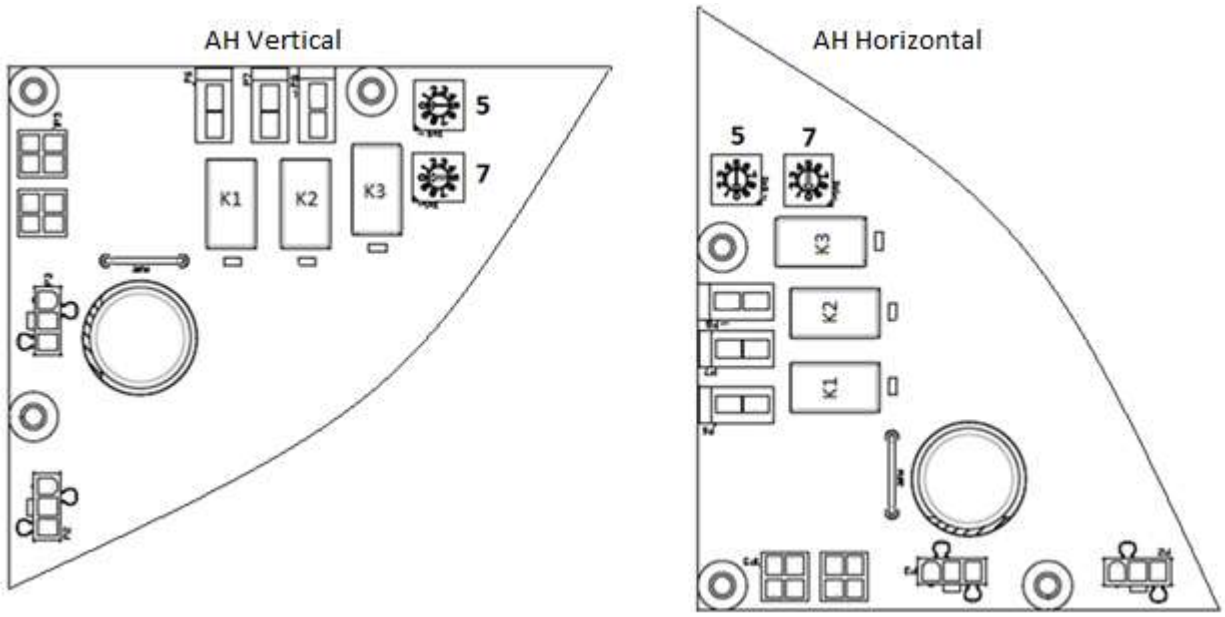
If the Equipment Shutdown Input Status is set to Reversed, a 24 VAC input on UC J18-2 is needed for the unit to run.

This will allow either a Normally Open Shutdown Device or a Normally Closed Shutdown Device.



Adding Electric Heat to a Symbio Air Handler paired with a Symbio Condenser

Set the Options Board address to **75.**



Add Electric Heat in the Symbio 700 Configuration by using one of the methods below.

Using the On-Board menu

Go to Home, Utilities, Edit Configuration, Primary Heat for TTA's, Secondary Heat for TWA's.

Using the Phone App

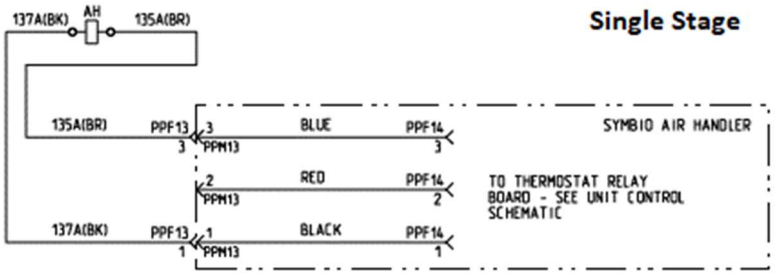
Go to Settings View Configuration, EDIT, Primary Heat for TTA's, Secondary Heat for TWA's.

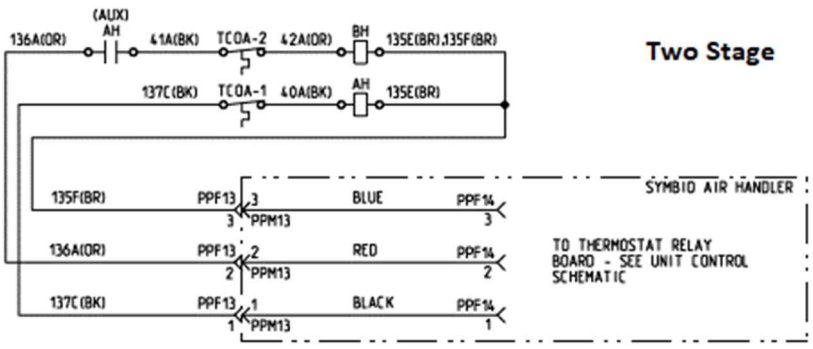
If the Options Board was powered up before setting the address, do an IMC Reset with the Phone App.

Go to Tools Service, IMC Link Reset

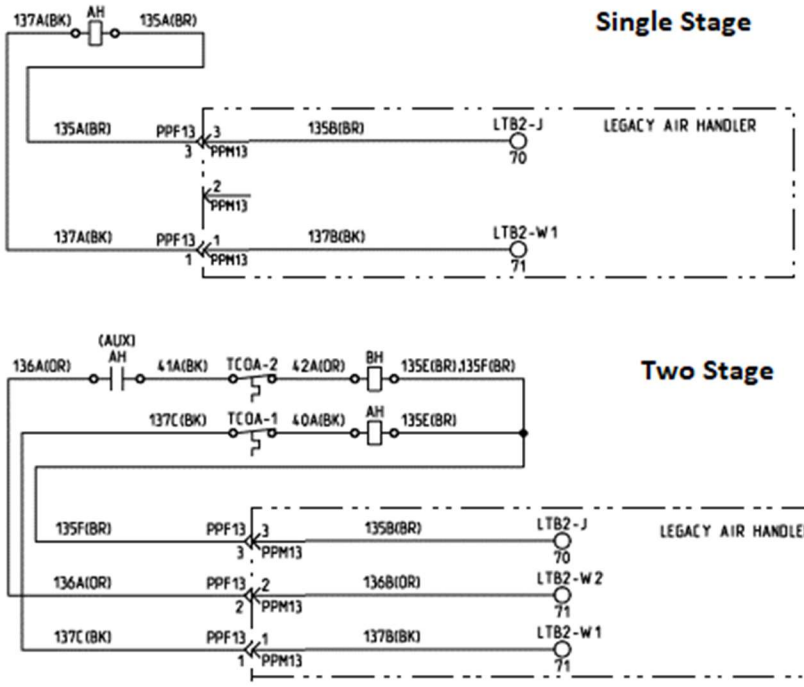
Typical Electric Heat Control Wiring

Symbio Air Handler





Legacy Air Handler



Odyssey Air Handler Identification / Pairing Guide

Symbio EM 2-Speed – Model Number Digit 15 = C

Factory installed VFD, Relay Board has a plug on J11

With Symbio Condenser = Pairing H

With EM Condenser = Pairing C

With Reliatel Condenser = Pairing E

Symbio SZVAV / 2-speed – Model Number Digit 15 = D

Factory installed VFD, Relay Board has a plug on P1, a*lso has Factory installed Options Board*

With Symbio Condenser = Pairing B

With EM Condenser = Pairing D

With Reliatel Condenser = Pairing F

Symbio CV – Model Number Digit 15 = 1

No Factory installed VFD (contactor for indoor fan), Relay Board has a plug on J9

With Symbio Condenser = Pairing A

With EM Condenser = Pairing 3

With Reliatel Condenser = Pairing 4

Legacy CV – Model Number Digit 15 = 0 *or Digits 9-10 = 00*

No Factory installed VFD (contactor for the indoor fan)

With Symbio Condenser = Pairing 1

Legacy EM 2-Speed – Model Number Digit 15 = A *or Digits 9-10 = 03, 04*

Factory installed VFD, No RTOM Board

With Symbio Condenser = Pairing 2

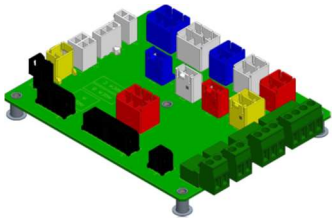
Legacy SZVAV / 2-speed – Model Number Digit 15 = B *or Digits 9-10 = R3, R4*

Factory installed VFD, Factory installed RTOM Board

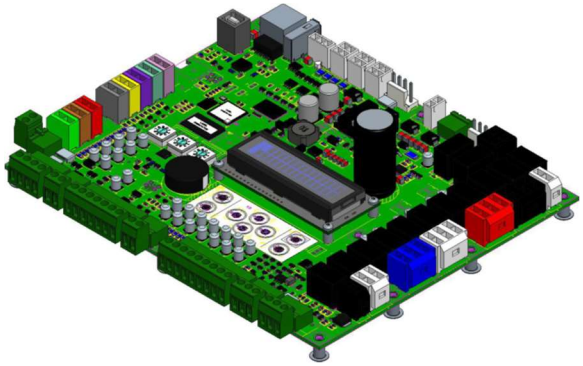
With Symbio Condenser = Pairing G

List of Abbreviations Used in Wiring Instructions

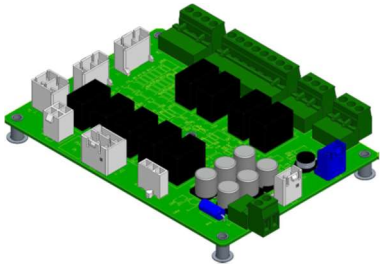
AB – Adapter Board (the small board in the Symbio Condenser Control Box)



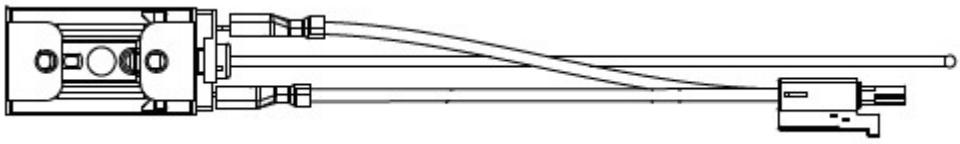
UC – Unit Controller (the board in the Symbio Condenser Control Box that has the display)



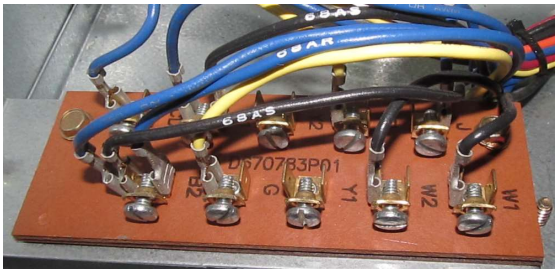
RB – Relay Board (the board in the Symbio Air Handler Control Box that has the green terminal blocks and little black relays)

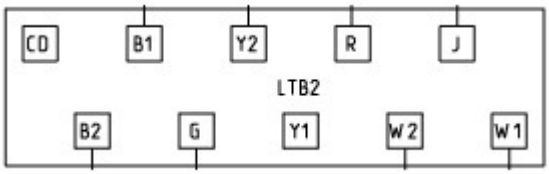


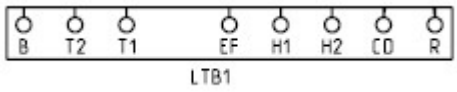
EDC – The Evaporator Coil Defrost Control in the Air Handler

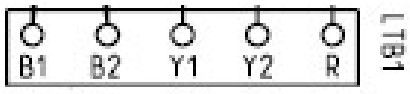


LTB – Low Voltage Terminal Board

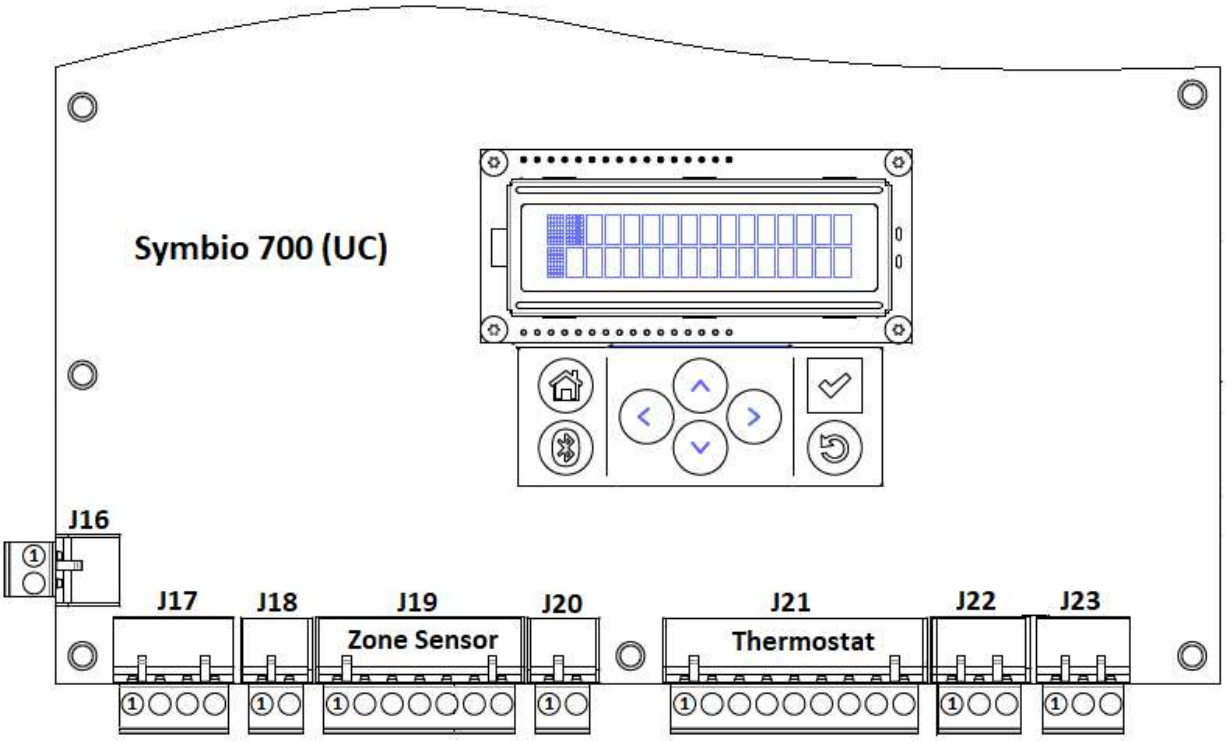




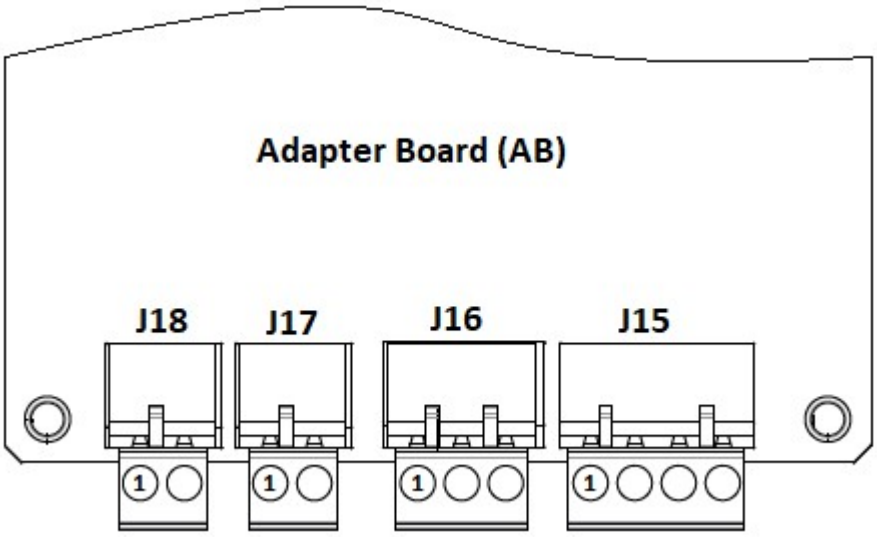




Symbio 700 (UC) Field Connection Terminals



Adapter Board (AB) Field Connection Terminals



Officially Allowed Pairings

Symbio Condenser with a Symbio CV Air Handler = Pairing A

Symbio Condenser with a Symbio SZVAV / 2-Speed Air Handler = Pairing B

Legacy Electromechanical Condenser with a Symbio EM 2-Speed Air Handler = Pairing C

Symbio Condenser with a Legacy CV Air Handler = Pairing 1

Symbio Condenser with a Legacy EM 2-Speed Air Handler = Pairing 2

Legacy Electromechanical Condenser with a Symbio CV Air Handler = Pairing 3

Legacy Reliatel Condenser with a Symbio CV Air Handler = Pairing 4

Symbio Condenser with Symbio CV Air Handler (Pairing A)

Wire Zone Sensor to UC J19 or Thermostat to UC J21 (except for thermostat R, wire that to the Adapter Board J15-1.

Connections between Condenser and Air Handler

3 - 4 wires

- Symbio Condenser Adapter Board J15-1 to Symbio Air Handler Relay Board J10-1.
- Symbio Condenser Adapter Board J15-2 to Symbio Air Handler Relay Board J10-2.
- Symbio Condenser Adapter Board J18-1 to Symbio Air Handler Relay Board J5-4. *(Indoor fan run)*
- Symbio Condenser (UC) J16-2 to Symbio Air Handler Relay Board J5-1. *(Optional, for EDC)*

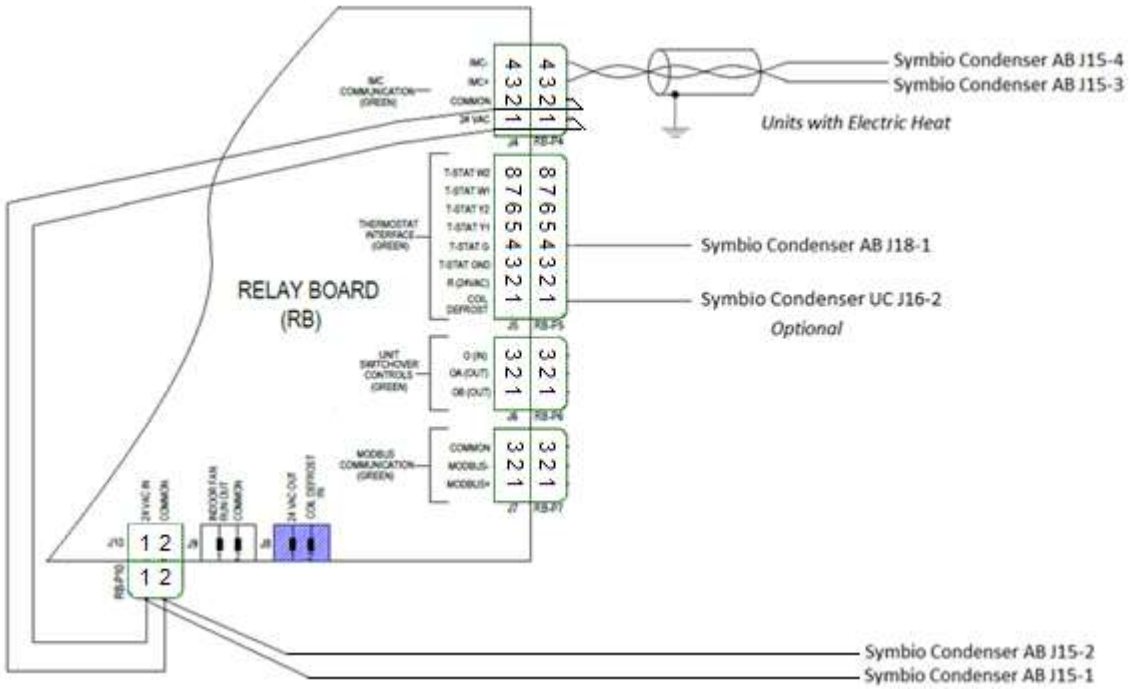
With Electric Heat

Shielded Twisted Pair *(ground shield in air handler)*

- Symbio Condenser Adapter Board J15-3 & 4 to Symbio Air Handler Relay Board J4-3 & 4.

2 Wires inside Air Handler

- Symbio Air Handler Relay Board J10-1 & 2 to Symbio Air Handler Relay Board J4-1 & 2.



Symbio Condenser with Symbio SZVAV / 2 Speed Air Handler (Pairing B)

Wire Zone Sensor to UC J19 or Thermostat to UC J21 (except for thermostat R, wire that to the Adapter Board J15-1.

Connections between Condenser and Air Handler

4 - 5 wires

- Symbio Condenser Adapter Board J15-1 to Symbio Air Handler Relay Board J10-1.
- Symbio Condenser Adapter Board J15-2 to Symbio Air Handler Relay Board J10-2.
- Symbio Condenser Adapter Board J18-1 to Symbio Air Handler Relay Board J5-4. *(Indoor fan run)*
- Symbio Condenser (UC) J16-2 to Symbio Air Handler Relay Board J5-1. *(Optional, EDC)*
- Symbio Condenser Adapter Board J16-3 to Symbio Air Handler Relay Board J7-3

Shielded Twisted Pair *(ground shield in air handler)*

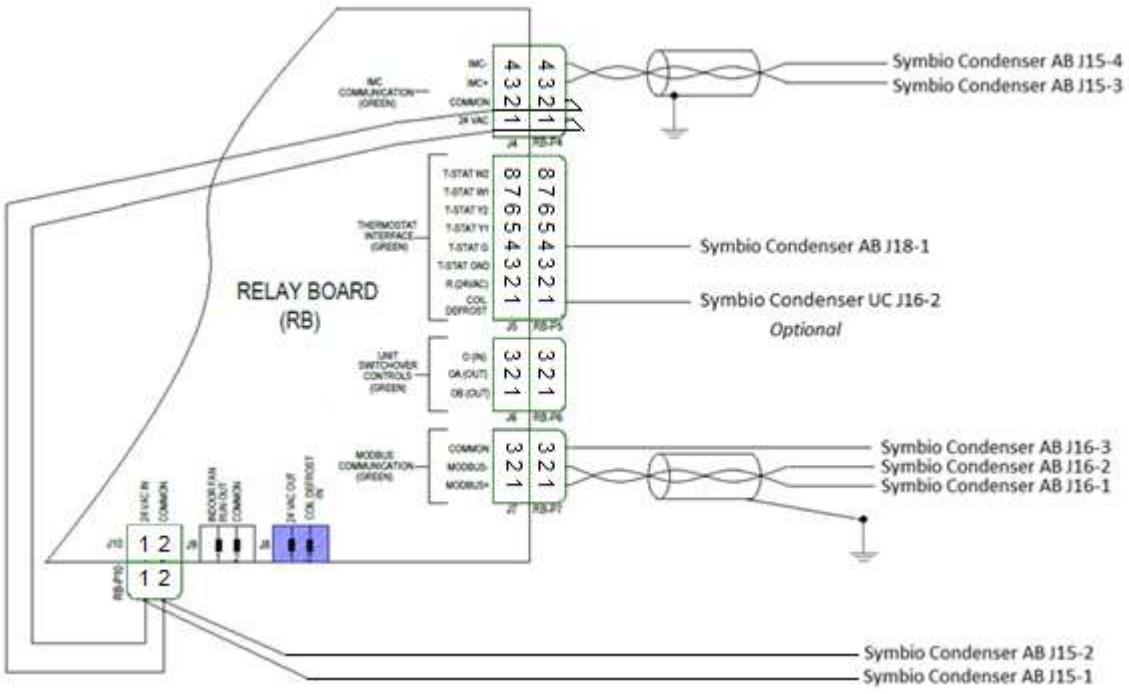
- Symbio Condenser Adapter Board J15-3 & 4 to Symbio Air Handler Relay Board J4-3 & 4.

Shielded Twisted Pair *(ground shield in air handler)*

- Symbio Condenser Adapter Board J16-1 & 2 to Symbio Air Handler Relay Board J7-1 & 2

2 Wires inside the Air Handler

- Symbio Air Handler Relay Board J10-1 & 2 to Symbio Air Handler Relay Board J4-1 & 2.



Legacy Electromechanical Condenser with Symbio EM 2-Speed Air Handler (Pairing C)

Wire thermostat to Air Handler Relay Board J5 except for thermostat R, wire that to J10-1.

Connections between Condenser and Air Handler

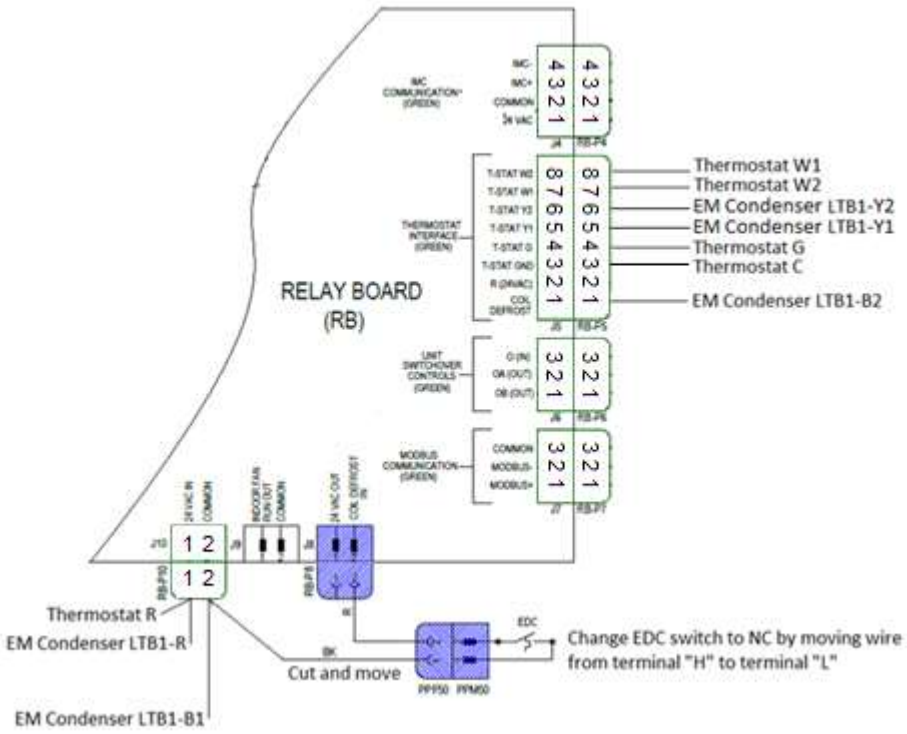
5 wires

- Electromechanical Condenser LTB1-R to Symbio Air Handler Relay Board J10-1.
- Electromechanical Condenser LTB1-B1 to Symbio Air Handler Relay Board J10-2.
- *Electromechanical Condenser LTB1-Y1 to Symbio Air Handler Relay Board J5-5.*
- Electromechanical Condenser LTB1-Y2 to Symbio Air Handler Relay Board J5-6.
- Electromechanical Condenser LTB1-B2 to Symbio Air Handler Relay Board J5-1.

Note: If you have a Single Compressor Condenser jump Relay Board J5-5 and J5-6 together in the Air Handler.

If the EDC (Evaporator Defrost Control) thermostat is used, follow these steps:

- Switch is shipped in the normally open configuration. Move wire from terminal “H” to terminal “L” on EDC switch, enabling normally closed switch operation.
- Cut the EDC Black wire from plug J8-1 and move to J10-2 (Common)



Symbio Condenser with Legacy CV Air Handler (Pairing 1)

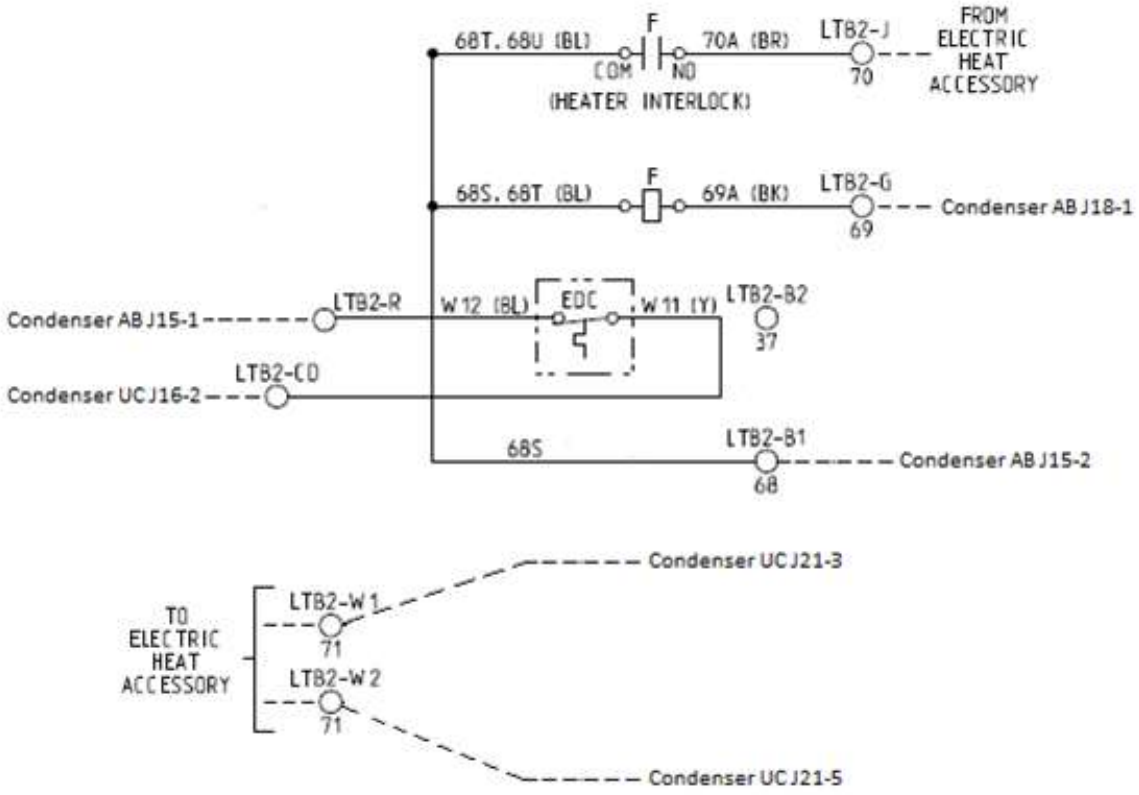
Note: A Zone Sensor will not control Electric Heat.
Note: Heat Pumps will not have heat in defrost.

Wire the thermostat to the Symbio 700 J21 except for R, wire thermostat R to Symbio Adapter Board J15-1.

Connections between Cooling Condenser and Air Handler

2 - 4 Wires w/o electric heat, 4 - 6 wires with electric heat.

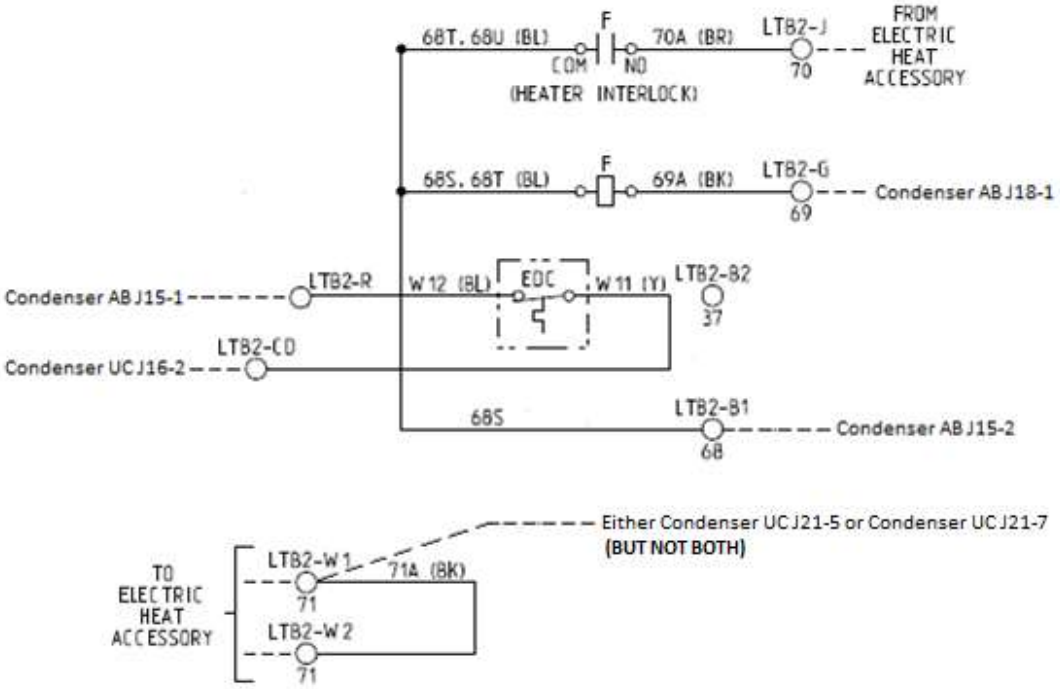
- Symbio Condenser Adapter Board J15-1 to LTB2-R in the air handler. *(Optional, for EDC)*
- Symbio Condenser Adapter Board J15-2 to LTB2-B1 in the air handler.
- Symbio Condenser Adapter Board J18-1 to LTB2-G in the air handler.
- Symbio Condenser UC J16-2 to LTB2-CD in the air handler. *(Optional, for EDC)*
- Symbio Condenser UC J21-3 to Air Handler LTB2-W1.
- Symbio Condenser UC J21-5 to Air Handler LTB2-W2.



Connections between Heat Pump Condenser and Air Handler

2 - 4 Wires w/o electric heat, 3 - 5 wires with electric heat.

- *Symbio Condenser Adapter Board J15-1 to LTB2-R in the Air handler. (Optional, for EDC)*
- **Symbio Condenser Adapter Board J15-2 to LTB2-B1 in the Air handler.**
- **Symbio Condenser Adapter Board J18-1 to LTB2-G in the Air handler.**
- *Symbio Condenser UC J16-2 to LTB2-CD in the Air handler. (Optional, for EDC)*
- **Either** Symbio Condenser UC J21-5 (W2) or UC J21-7 (X2) to Air Handler LTB2-W1. **(BUT NOT BOTH)**



Primary Heating Source: If the Air Handler has Electric Heat, be sure to configure the Symbio 700 UC for **Primary Heating Source – Not Installed** or you will get a Diagnostic for Options Module Comm Fail (The Symbio 700 will still turn the Indoor Fan on with a W1 call)

If using the EDC (Evaporator Defrost Control) switch in the legacy air handler:

- If not already done make wiring changes to the EDC switch as indicated on the Air Handler wiring diagram for Reliatel Controls.
- Using the Phone App go to Tools, Service, Customer Connection Polarity, and change Demand Limit Input to Reversed.
- In Settings, Edit Configuration set Demand Management to Demand Limit and in Settings, Refrigeration set Cooling Demand Limit Capacity Enable Setpoint to 0%.

Symbio Condenser with Legacy EM 2 Speed Air Handler (Pairing 2)

Note: A Zone Sensor will not control Electric Heat.
Note: Heat Pumps will not have heat in defrost.

Wire the thermostat to the Symbio 700 J21 except for R, wire thermostat R to Symbio Adapter Board J15-1.

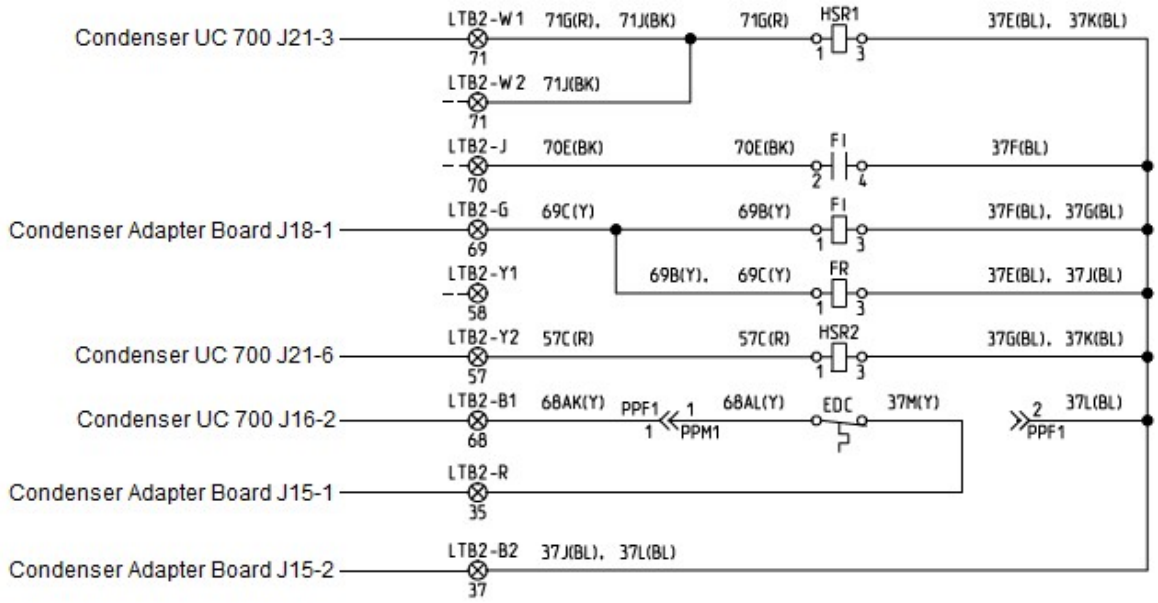
Connections between Cooling Condenser and Air Handler

3 - 5 Wires w/o electric heat, 4 - 6 Wires with electric heat

- *Symbio Condenser Adapter Board J15-1 to Air Handler LTB2-R. (Optional, for EDC)*
- **Symbio Condenser Adapter Board J15-2 to Air Handler LTB2-B2** ***(common)***
- **Symbio Condenser Adapter Board J18-1 to Air Handler LTB2-G.** ***(low speed fan)***
- *Symbio Condenser UC J16-2 to Air Handler LTB2-B1. (Optional, for EDC)*
- **Symbio Condenser UC J21-6 to Air Handler LTB2-Y2.** ***(high speed fan)***

Note: If you have a Single Compressor Condenser connect UC J21-2 to LTB2-Y2 to bring on High Speed Fan in cooling.

- Symbio Condenser UC J21-3 to Air Handler LTB2-W1 *(W1 and W2 are jumped together in the Air Handler to take care of activating high speed fan)*



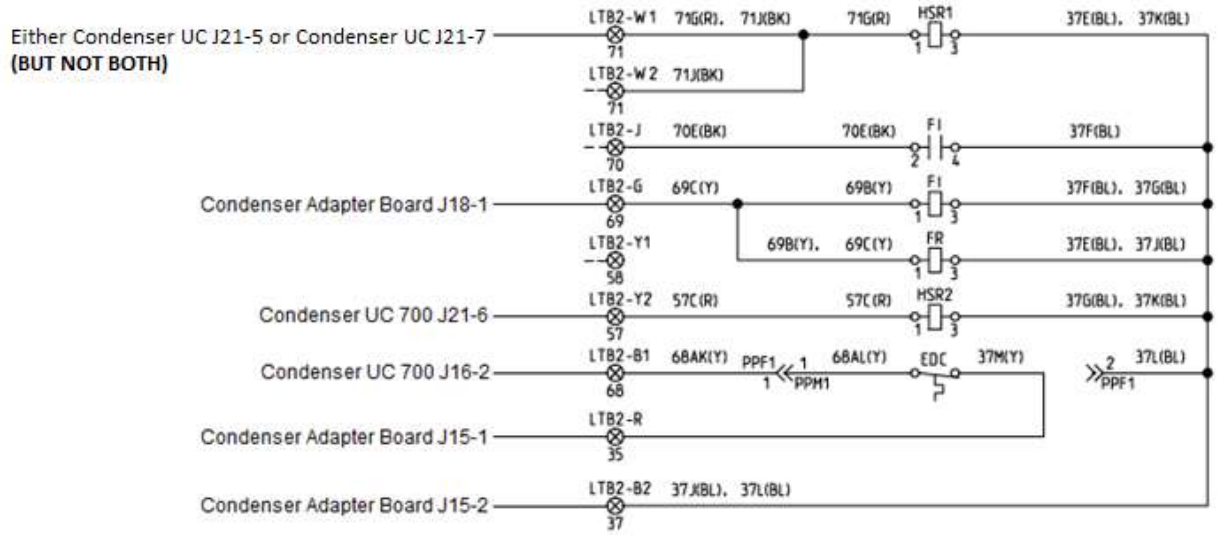
Connections between Heat Pump Condenser and Air Handler

3 - 5 Wires w/o electric heat, 4 - 6 Wires with electric heat

- *Symbio Condenser Adapter Board J15-1 to Air Handler LTB2-R. (Optional, for EDC)*
- **Symbio Condenser Adapter Board J15-2 to Air Handler LTB2-B2** ***(common)***
- **Symbio Condenser Adapter Board J18-1 to Air Handler LTB2-G.** ***(low speed fan)***
- *Symbio Condenser UC J16-2 to Air Handler LTB2-B1. (Optional, for EDC)*
- **Symbio Condenser UC J21-6 to Air Handler LTB2-Y2.** ***(high speed fan)***

Note: If you have a Single Compressor Condenser connect UC J21-2 to LTB2-Y2 to bring on High Speed Fan in cooling.

- **Either** Symbio Condenser UC J21-5 (W2) or UC J21-7 (X2) to Air Handler LTB2-W1. **(BUT NOT BOTH)**
  (W1 and W2 are jumped together in the Air Handler to take care of activating high speed fan)



Symbio Configuration

- **Indoor Fan Type:** When connecting the SymbioTM Condenser to an electromechanical air handler with 2-speed fan operation, ensure that the Symbio 700 UC Indoor Fan Type configuration is set to its default "**Single Speed**" selection. The Air Handler Relay Board will take care of switching the fan speeds based on the thermostat call.

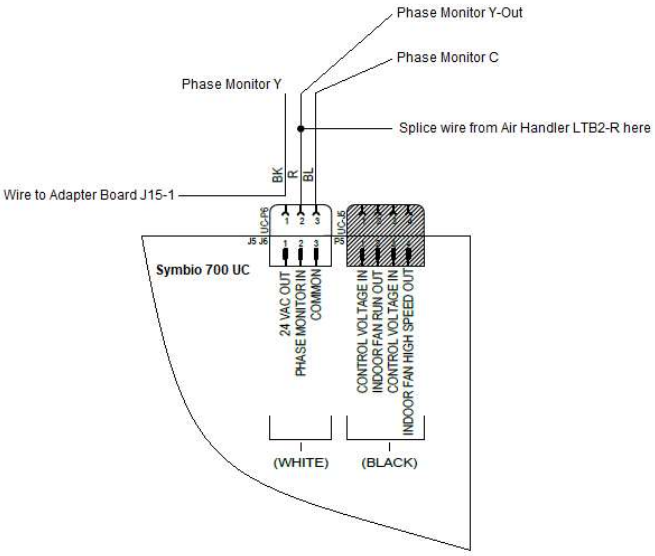
- **Primary Heating Source:** If the Air Handler has Electric Heat, be sure to configure the Symbio 700 UC for **Primary Heating Source – Not Installed** or you will get a Diagnostic for Options Module Comm Fail (The Symbio 700 will still turn the Indoor Fan on with a W1, W2 or X2 call)

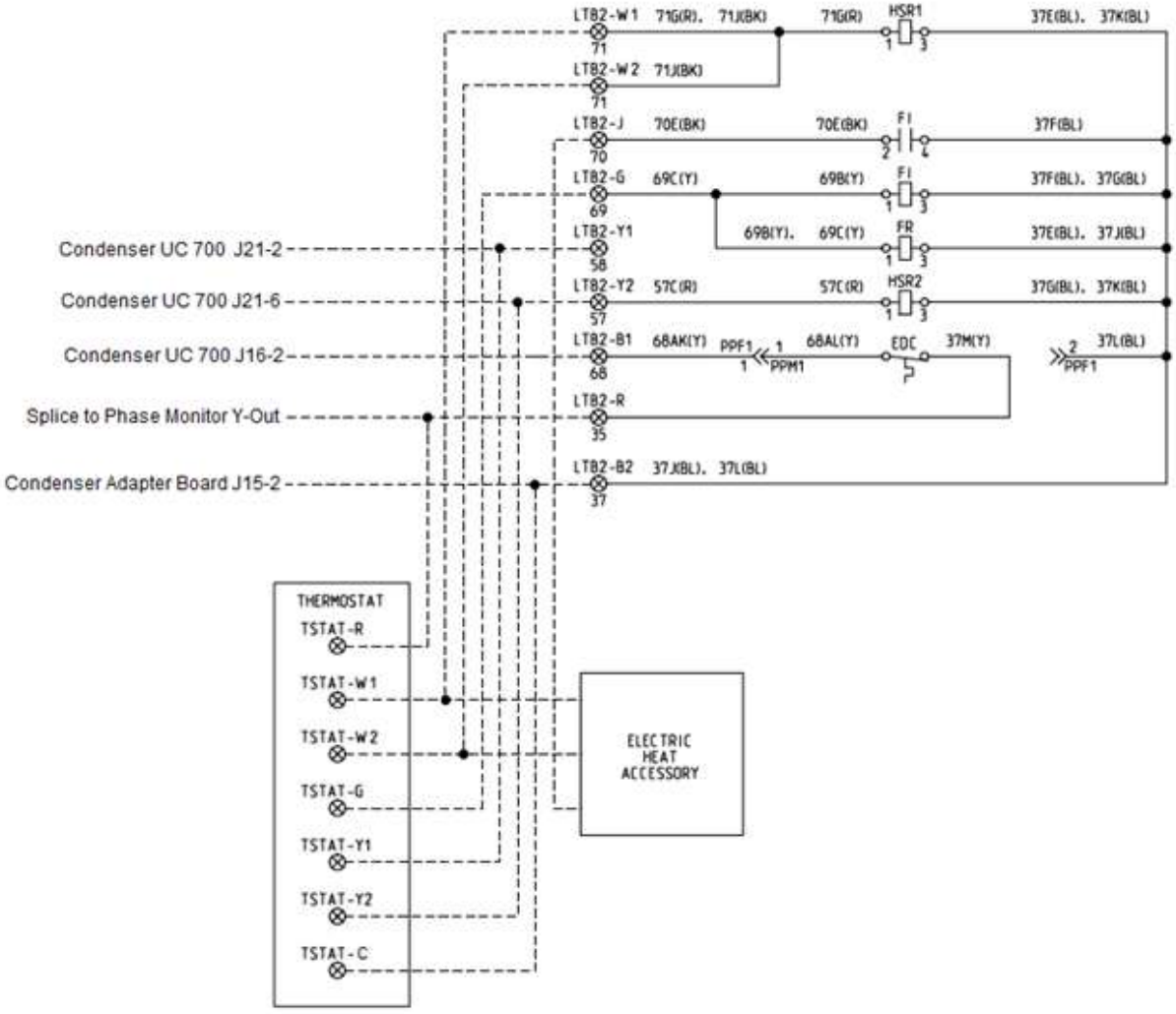
If using the EDC (Evaporator Defrost Control) thermostat in the legacy air handler.

- Move wire 37M to LTB2-R
- Using the Phone App go to Tools, Service, Customer Connection Polarity, and change Demand Limit Input to Reversed.
- In Settings, Edit Configuration set Demand Management to Demand Limit and in Settings, Refrigeration set Cooling Demand Limit Capacity Enable Setpoint to 0%

If the thermostat cannot be wired directly to the Symbio 700 because of existing construction constraints, make EDC switch changes in step 3 above and…

- On the Symbio 700 UC J6-1 cut the black wire from the plug and run to Condenser Adapter Board J15-1.
- Air Handler LTB2-R, splice to Phase Monitor Y-Out.
- Air Handler LTB2-B2 to Condenser Adapter Board J15-2.
- Air Handler LTB2-Y1 to Condenser UC 700 J21-2.
- Air Handler LTB2-Y2 to Condenser Adapter Board J21-6.
- Air Handler LTB2-B1 to Condenser UC 700 J16-2 *(for EDC Switch)*




LTB2-W1 71G(R). 71J(BK)
71
71G(R)
HSR1
37E(BL). 37K(BL)
LTB2-W2 71J(BK)
71
LTB2-J 70E(BK)
70
70E(BK)
F1
37F(BL)
LTB2-G 69C(Y)
69
69B(Y)
F1
37F(BL). 37G(BL)
LTB2-Y1
58
69B(Y). 69C(Y)
FR
37E(BL). 37J(BL)
LTB2-Y2 57C(R)
57
57C(R)
HSR2
37G(BL). 37K(BL)
LTB2-B1 68AK(Y)
68
PPF1
PPM1
68AL(Y)
EDC
37M(Y)
37L(BL)
PPF1
LTB2-R
35
LTB2-B2 37J(BL). 37L(BL)
37
Condenser UC 700 J21-2
Condenser UC 700 J21-6
Condenser UC 700 J16-2
Splice to Phase Monitor Y-Out
Condenser Adapter Board J15-2
THERMOSTAT
TSTAT-R
TSTAT-W1
TSTAT-W2
TSTAT-G
TSTAT-Y1
TSTAT-Y2
TSTAT-C
ELECTRIC HEAT ACCESSORY

Legacy Electromechanical Condenser with Symbio CV Air Handler (Pairing 3)

Wire thermostat to the Air Handler Relay Board J5 except for R, wire R to the Symbio Air Handler Relay Board J10-1.
The Y1 from the thermostat will go directly to the Condenser LTB1-Y1.

The Y2 from the thermostat will go directly to the Condenser LTB1-Y2. *(if required)*

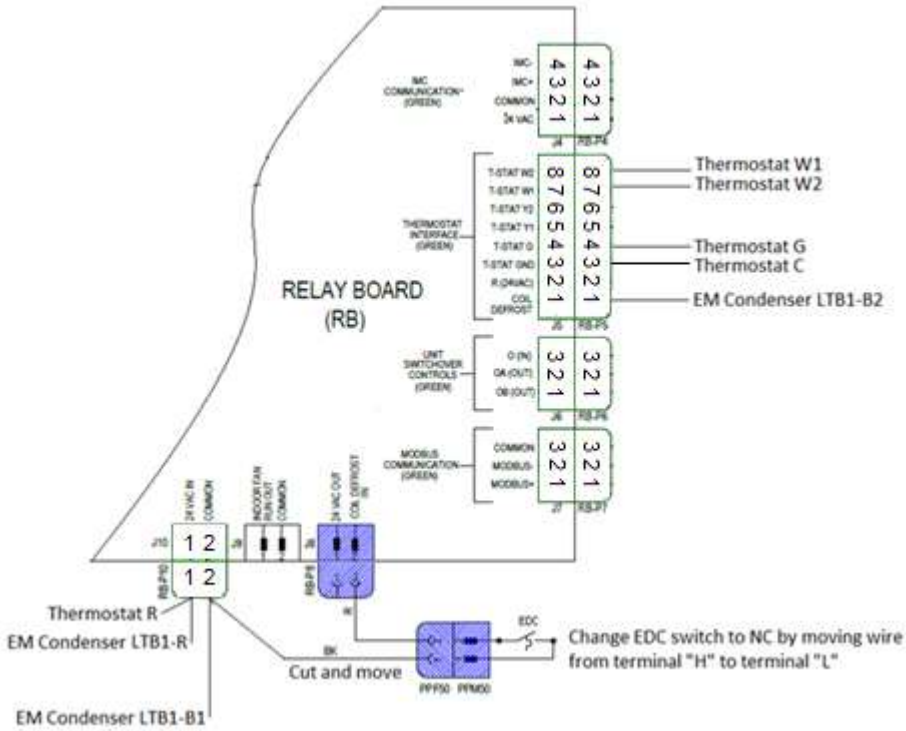
Connections between the Condenser and Air Handler

3 wires

- Condenser LTB1-R to Symbio Air Handler Relay Board J10-1.
- Condenser LTB1-B1 to Symbio Air Handler Relay Board J10-2.
- Condenser LTB1-B2 to Symbio Air Handler Relay Board J5-1.

If the EDC (Evaporator Defrost Control) thermostat is used, follow these steps:

- Switch is shipped in the normally open configuration. Move wire from terminal "H" to terminal "L" on EDC switch, enabling normally closed switch operation.
- Cut the EDC Black wire from plug J8-1 and move to J10-2 (Common)



Legacy Reliatel Condenser with Symbio CV Air Handler (Pairing 4)

Maintain and make no changes to wiring from zone control devices and/or Building Management System wiring to RTRM module in Reliatel condenser.

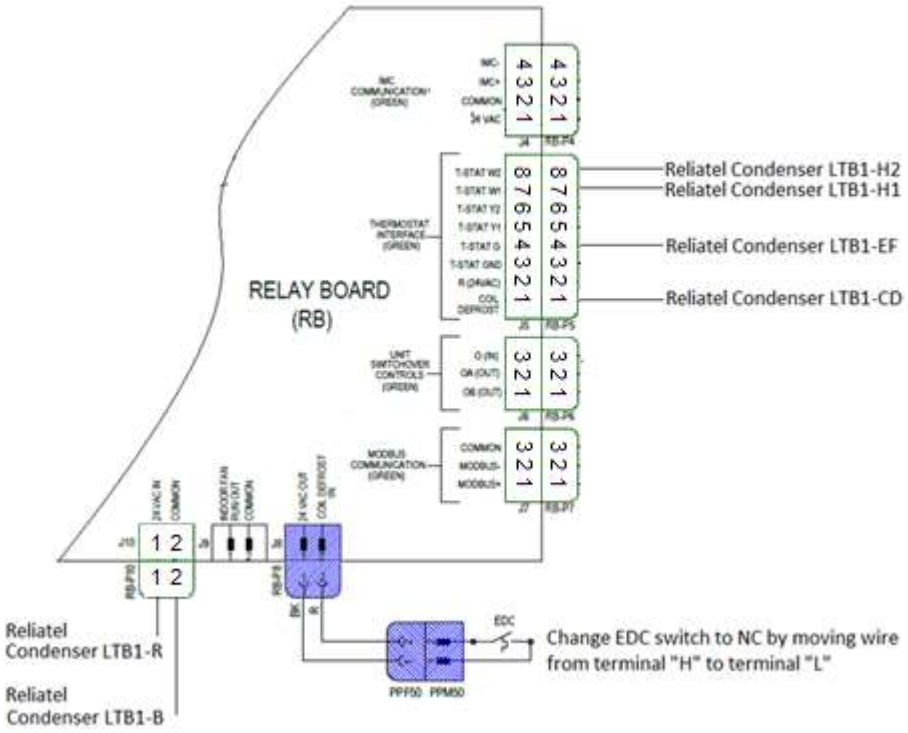
Connections Between the Condenser and Air Handler

4 wires w/o heat, 6 wires with heat

- Condenser LTB1-R to Air Handler Relay Board J10-1
- Condenser LTB1-B to Air Handler Relay Board J10-2
- Condenser LTB1-EF to Air Handler Relay Board J5-4
- Condenser LTB1-CD to Air Handler Relay Board J5-1
- Condenser LTB1-H1 to Air Handler Relay Board J5-7
- Condenser LTB1-H2 to Air Handler Relay Board J5-8

If the EDC (Evaporator Defrost Control) thermostat is used, follow these steps:

- Switch is shipped in the normally open configuration. Move wire from terminal “H” to terminal “L” on EDC switch, enabling normally closed switch operation.



Other Pairings

Legacy Electromechanical Condenser with a **Symbio SZVAV / 2 Speed Air Handler = Pairing D**

Reliatel Condenser paired with a Symbio EM 2 Speed Air Handler = Pairing E

Reliatel Condenser paired with a Symbio SZVAV / 2 Speed Air Handler = Pairing F

Symbio Condenser (Cooling Only) with Legacy SZVAV Air Handler = Pairing G

Symbio Condenser with a Symbio EM 2-Speed Air Handler = Pairing H

Wiring a Symbio Condenser to a Generic 24 VAC Controlled Air Handler

Twinning Odyssey Symbio Condensers Example

Legacy Electromechanical Condenser with a Symbio SZVAV / 2 Speed Air Handler (Pairing D)

Purchase from Trane Parts, Harness from Air Handler Relay Board J11 to VFD - WIR010190

Wire thermostat to Air Handler Relay Board J5 except for thermostat R, wire that to J10-1.

Connections between Condenser and Air Handler

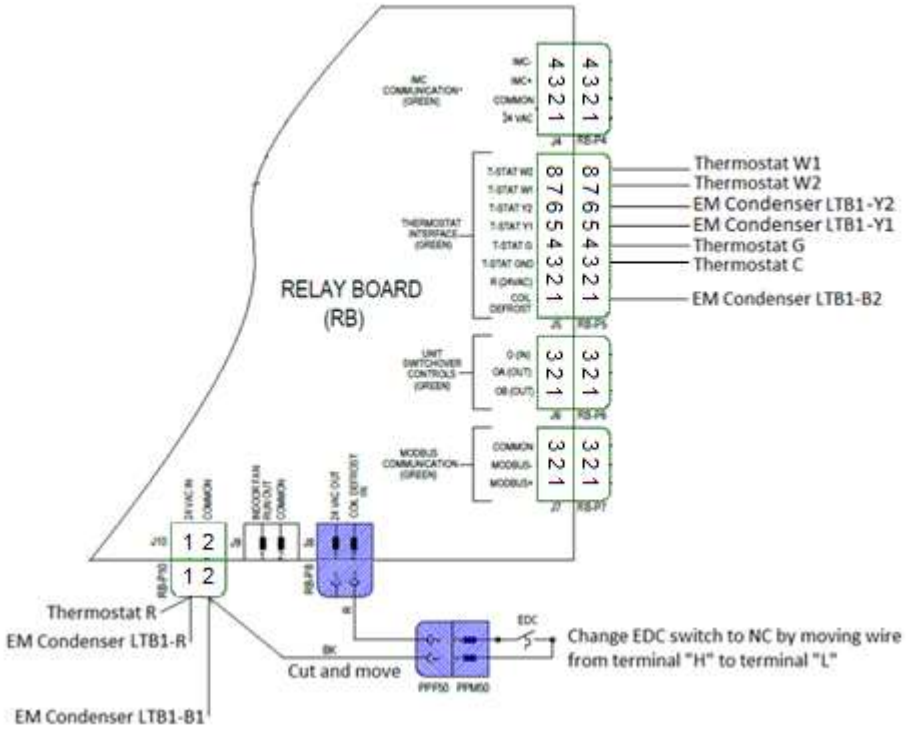
5 wires

- Electromechanical Condenser LTB1-R to Symbio Air Handler Relay Board J10-1.
- Electromechanical Condenser LTB1-B1 to Symbio Air Handler Relay Board J10-2.
- Electromechanical Condenser LTB1-B2 to Symbio Air Handler Relay Board J5-1
- Electromechanical Condenser LTB1-Y1 to Symbio Air Handler Relay Board J5-5.
- Electromechanical Condenser LTB1-Y2 to Symbio Air Handler Relay Board J5-6.

Note: If you have a Single Compressor Condenser jump Relay Board J5-5 and J5-6 together in the Air Handler.

If the EDC (Evaporator Defrost Control) thermostat is used, follow these steps:

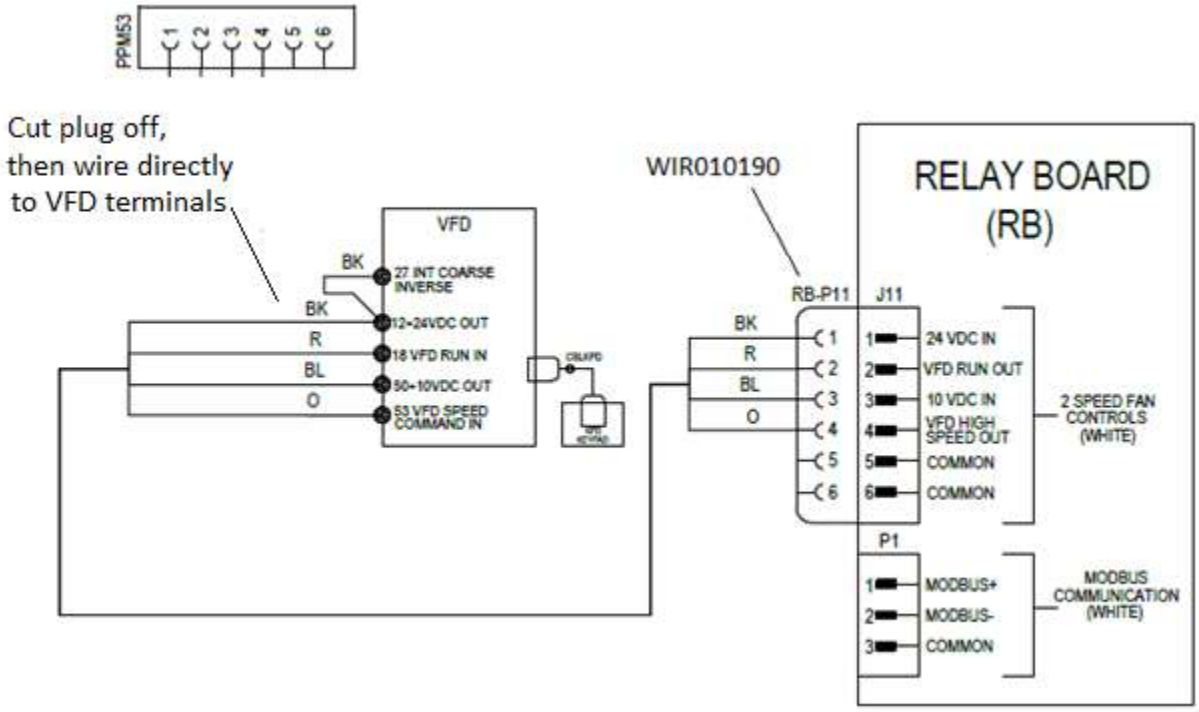
- Switch is shipped in the normally open configuration. Move wire from terminal “H” to terminal “L” on EDC switch, enabling normally closed switch operation.
- Cut the EDC Black wire from plug J8-1 and move to J10-2 (Common)



TR-150 VFD

Remove the existing wire harness from Relay Board P1 to VFD terminals 61, 68 and 69.

Install WIR010190 following the diagram below.



TR-150 VFD Re-Programing

Change 3-15 from Local Bus to Analog Input 53

Change 5-10 from No Operation to Start

Change 5-12 from No Operation to Coast Inverse

Change 8-01 from Control Word Only to Digital and Control Word

Change 8-02 from FC Port to None

Verify 4-12 is set to 25 HZ

Verify 4-14 is set to 60 HZ

Verify 6-10 is set to 0.07V

Verify 6-11 is set to 10.00V

Verify 6-14 is set to 25 HZ

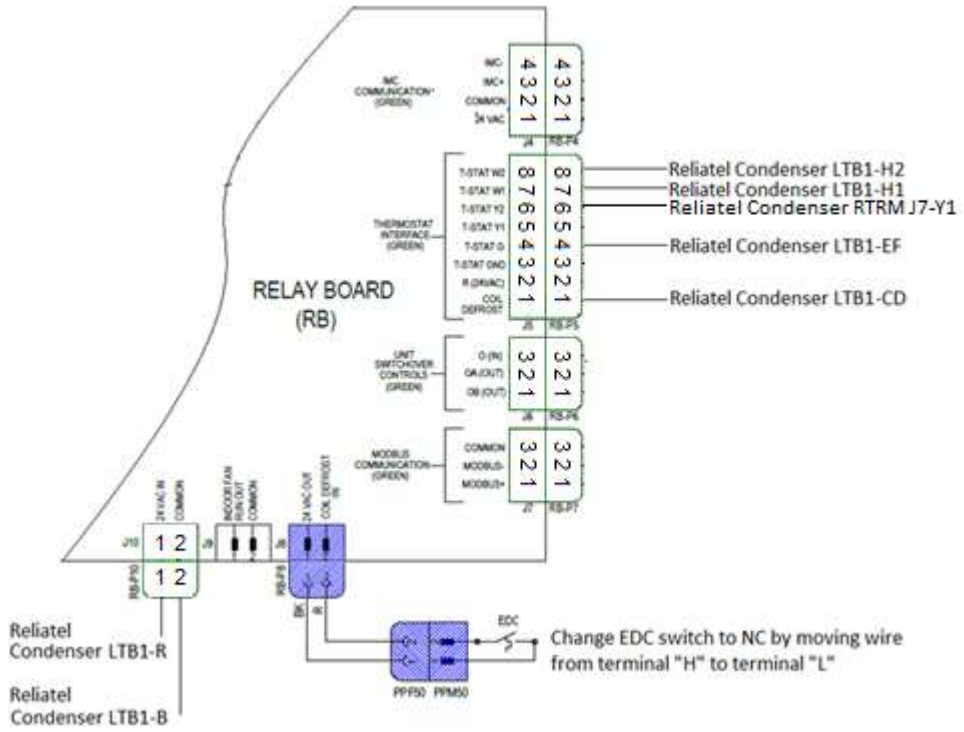
Verify 6-15 is set to 60 HZ

Reliatel Condenser paired with a Symbio EM 2-Speed Air Handler (Pairing E)

Must use a Conventional Thermostat wired to the RTRM J7.

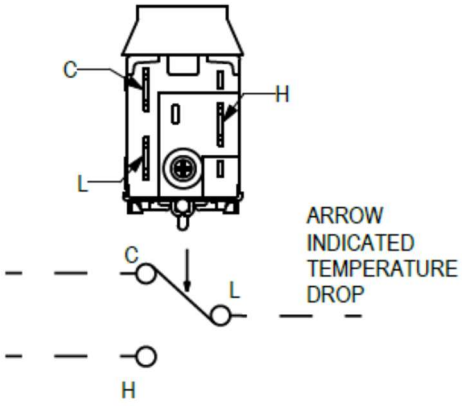
Interconnecting Wiring – 5 wires, or 7 wires with electric heat.

- Condenser LTB1-R to Air Handler Relay Board J10-1
- Condenser LTB1-B to Air Handler Relay Board J10-2
- Condenser RTRM J7 (Y1) to Air Handler Relay Board J5-6 *(to activate high speed fan in cooling)*
- Condenser LTB1-EF to Air Handler Relay Board J5-4
- Condenser LTB1-CD to Air Handler Relay Board J5-1
- Condenser LTB1-H1 to Air Handler Relay Board J5-7 - *Electric Heat*
- Condenser LTB1-H2 to Air Handler Relay Board J5-8 - *Electric Heat*



EDC Switch - *Optional*

Move wire from terminal “H” to terminal “L” on EDC switch, enabling normally closed switch operation.



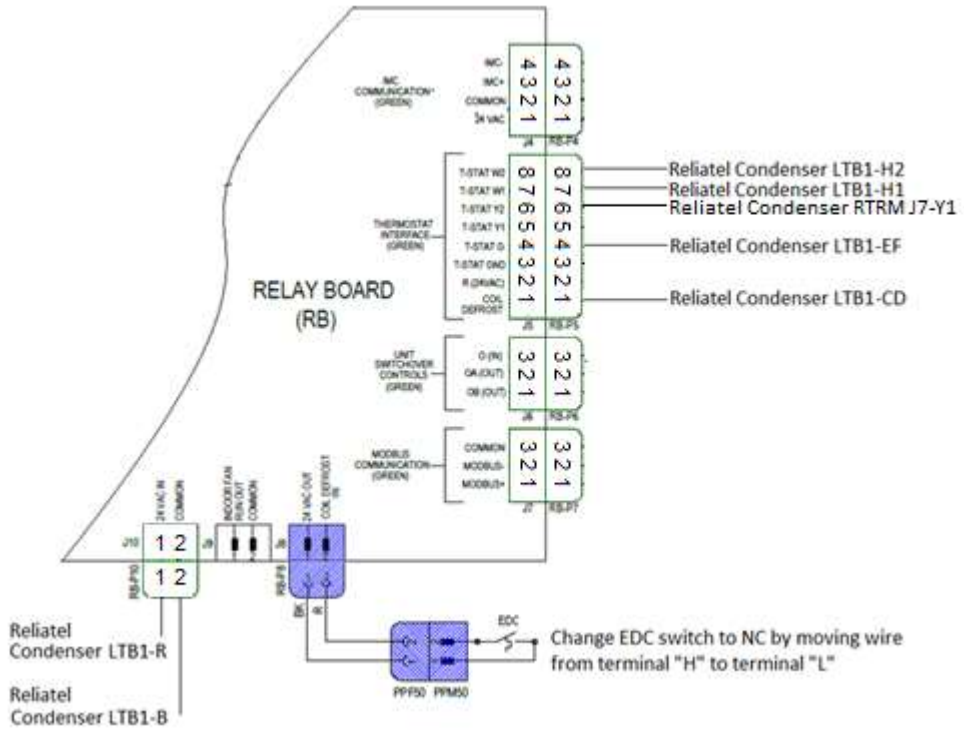
Reliatel Condenser paired with a Symbio SZVAV / 2 Speed Air Handler (Pairing F)

Must use a Conventional Thermostat wired to the RTRM J7.

Purchase from Trane Parts, Harness from Air Handler Relay Board J11 to VFD - WIR010190

Interconnecting Wiring – 5 wires, or 7 wires with electric heat.

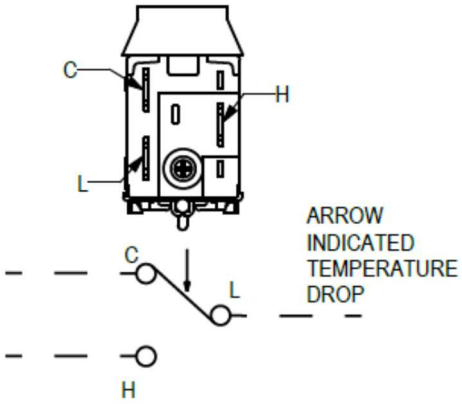
- Condenser LTB1-R to Air Handler Relay Board J10-1
- Condenser LTB1-B to Air Handler Relay Board J10-2
- Condenser RTRM J7 (Y1) to Air Handler Relay Board J5-6 *(to activate high speed fan in cooling)*
- Condenser LTB1-EF to Air Handler Relay Board J5-4
- Condenser LTB1-CD to Air Handler Relay Board J5-1
- Condenser LTB1-H1 to Air Handler Relay Board J5-7 - *Electric Heat*
- Condenser LTB1-H2 to Air Handler Relay Board J5-8 - *Electric Heat*



EDC Switch - *Optional*

- Condenser LTB2-CD to Air Handler Relay Board J5-1

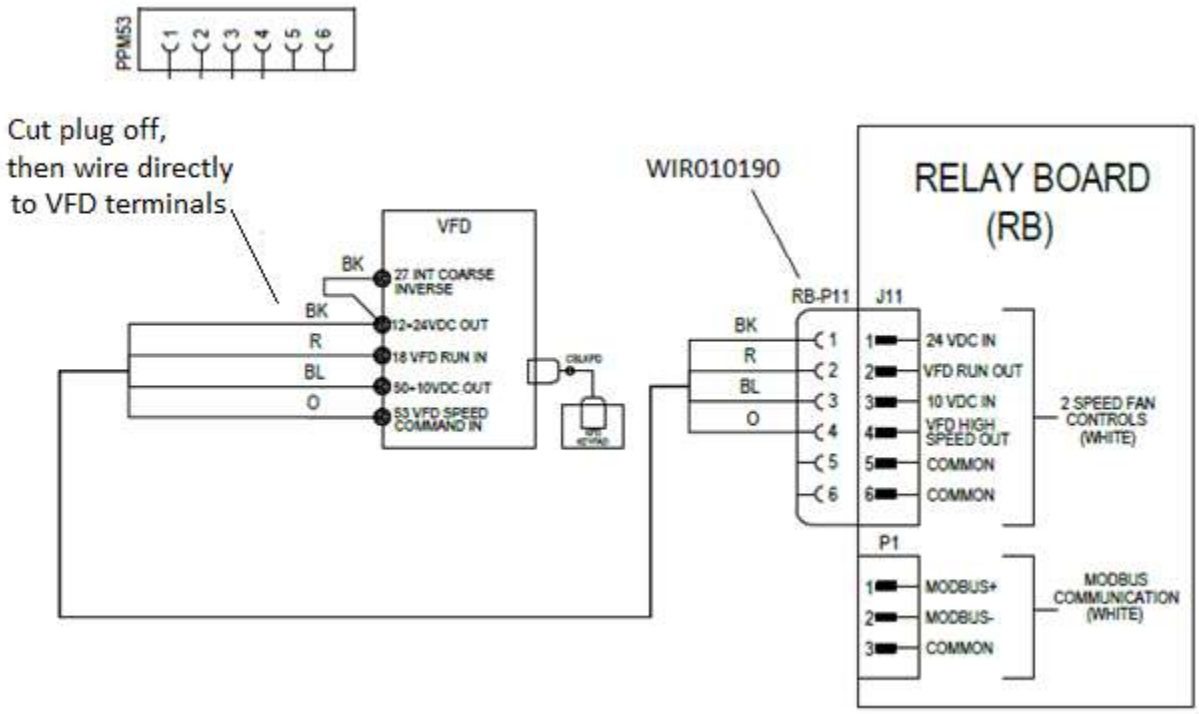
Move wire from terminal “H” to terminal “L” on EDC switch, enabling normally closed switch operation.



TR-150 VFD

Remove the existing wire harness from Relay Board P1 to VFD terminals 61, 68 and 69.

Install WIR010190 following the diagram below.



TR-150 VFD Re-Programing

Change 3-15 from Local Bus to Analog Input 53

Change 5-10 from No Operation to Start

Change 5-12 from No Operation to Coast Inverse

Change 8-01 from Control Word Only to Digital and Control Word

Change 8-02 from FC Port to None

Verify 4-12 is set to 25 HZ

Verify 4-14 is set to 60 HZ

Verify 6-10 is set to 0.07V

Verify 6-11 is set to 10.00V

Verify 6-14 is set to 25 HZ

Verify 6-15 is set to 60 HZ

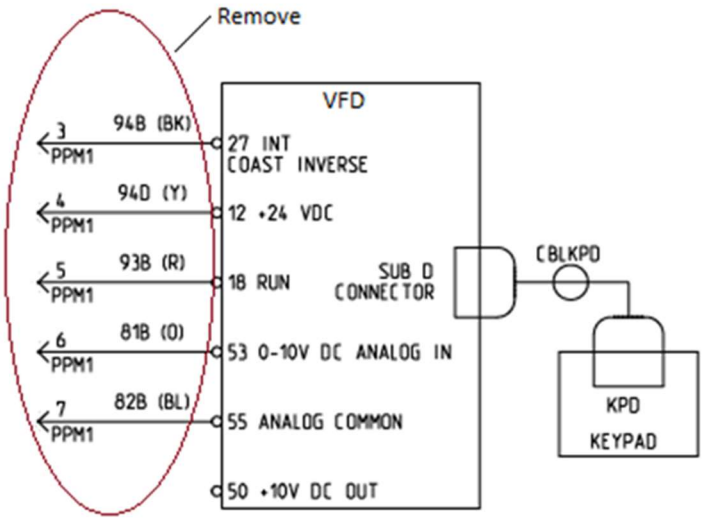
Symbio Condenser (Cooling Only) with Legacy SZVAV / 2 -Speed Air Handler (Pairing G)

Note: You will always have the following alarms, but the unit will still operate (as a multi-speed)

- ***Indoor Options Module Communication Status,***
- ***Diagnostic: Unit Communications Failure***
- ***Frostat Input***

Wire the thermostat to the Symbio 700 J21 except for R, wire thermostat R to Symbio Adapter Board J15-1.

Remove wires from VFD terminals 12, 18, 27, 53 & 55 and from Fan Run Relay terminals 2 & 4.



Connections between Cooling Condenser and Air Handler

5 Wires w/o electric heat, 7 Wires with electric heat

- Symbio Condenser Adapter Board J15-1 to Air Handler LTB2-R.
- Symbio Condenser Adapter Board J15-2 to Air Handler LTB2-B1.
- Symbio Condenser Adapter Board J18-1 to Air Handler LTB2-G.
- Symbio Condenser Adapter Board J16-3 to Air Handler VFD terminal 61.
- Symbio Condenser UC J16-2 to Air Handler LTB2-CD
- Symbio Condenser UC J21-3 to Air Handler LTB2-W1
- Symbio Condenser UC J21-5 to Air Handler LTB2-W2

Shielded Twisted Pair – *Ground shield at Air Handler*

- Condenser Adapter Board J16-1 to VFD Terminal 68, J16-2 to VFD Terminal 69.

Symbio Configuration

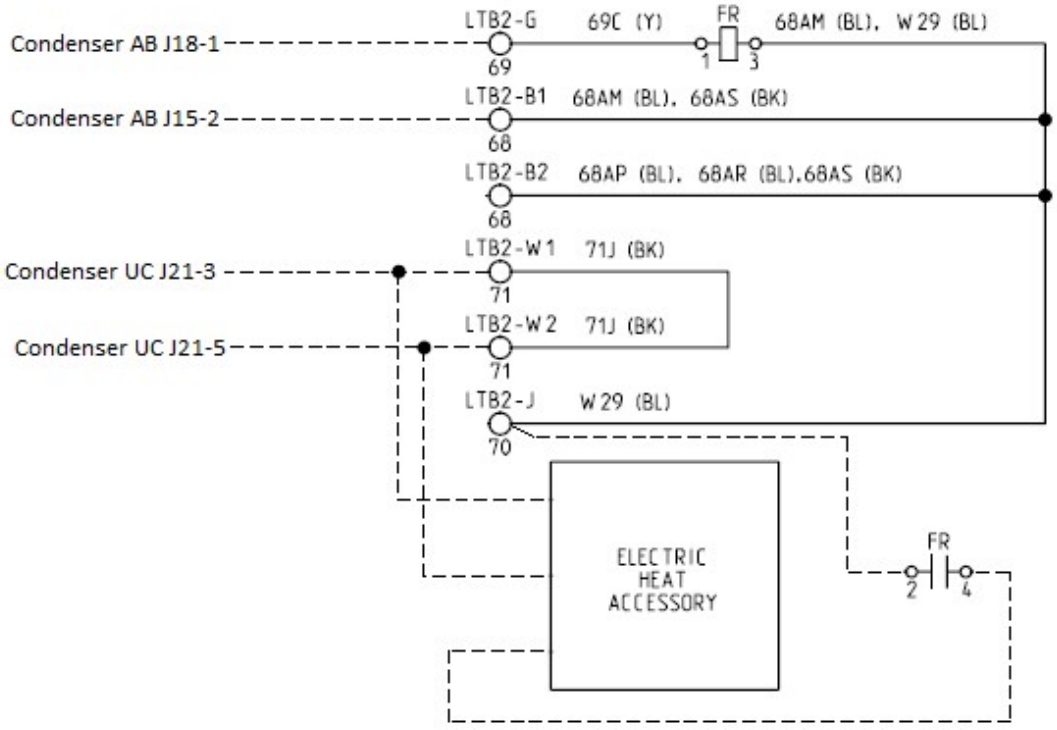
- **System Type**: CVZT, **Indoor Fan Type:** Multi Speed

TR-150 VFD Re-programming

3-15 Reference 1 Source – [11] Local Bus Reference
5-10 Terminal 18 Digital Input – [0] No Operation
5-12 Terminal 27 Digital Input – [0] No Operation
8-01 Control Site – [2] Control Word Only
8-02 Control Source – [1] FC Port
8-03 Control Timeout Time – 15.0 sec
8-04 Control Timeout Function – [2] Stop
8-30 Protocol – [2] Modbus RTU
8-31 Address – 2
8-32 Baud Rate – [7] 115200 Baud
8-33 Parity / Stop Bits – [0] Even Parity, 1 Stop Bit
8-35 Minimum Response Delay - .005 sec 5ms
8-36 Maximum Response Delay – .01 sec 100ms

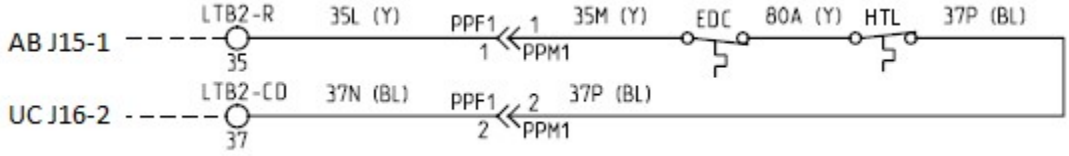
Repurpose Fan Run Relay to become a Fan Interlock for Electric Heat

- Move Brown electric heat control wire from LTB2-J to FR terminal 4.
- Add a field wire from LTB2-J to FR terminal 2.



If using the EDC (Evaporator Defrost Control) thermostat in the legacy air handler.

- Using the Phone App go to Tools, Service, Customer Connection Polarity and change Demand Limit Input to Reversed.
- In Edit Configuration, set Demand Management to Demand Limit and in Settings, Refrigeration set Cooling Demand Limit Capacity Enable Setpoint to 0%



Symbio Condenser with a Symbio EM 2-Speed Air Handler (Pairing H)

These two units are not intended to be paired together. If (by accident) they end up together here are some suggestions to make it work.

Wire the thermostat directly to the Symbio 700 (UC) J21 except for R, wire thermostat R to Symbio Adapter Board J15-1.

Note: A Zone Sensor will not control Electric Heat in this application.

Note: If the Symbio Condenser is a Heat Pump, electric heat will not activate in defrost mode.

Symbio Configuration

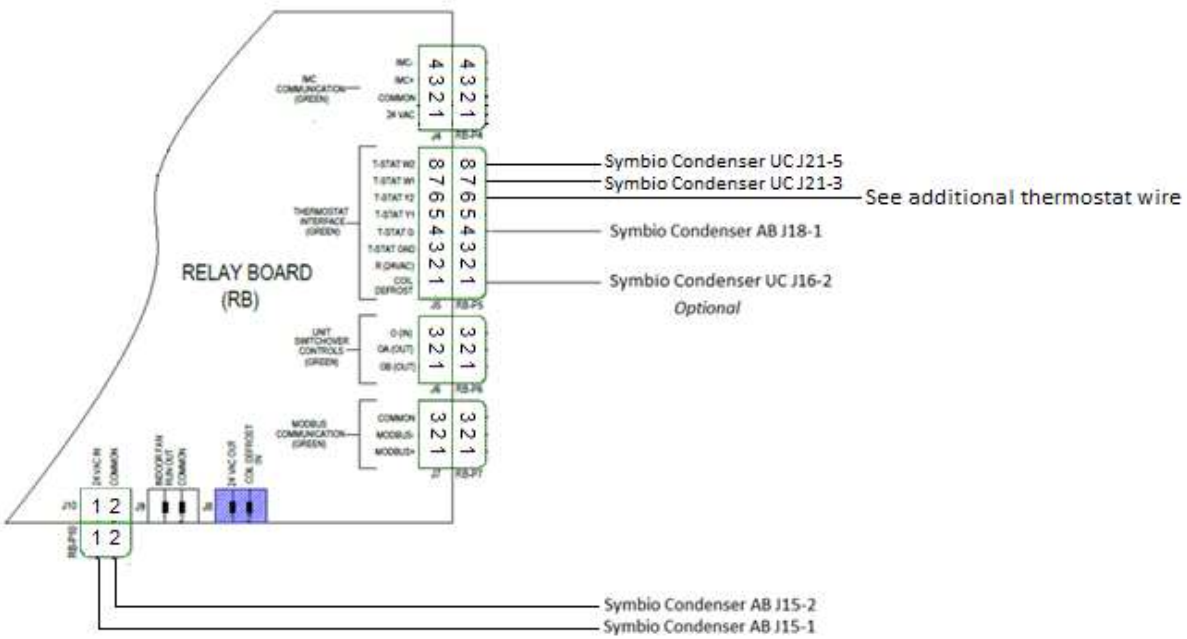
Indoor Fan Type: When connecting the Symbio Condenser to an electromechanical air handler with 2-speed fan operation, ensure that the Symbio 700 UC Indoor Fan Type configuration is set to its default "**Single Speed**" selection. The Air Handler Relay Board will take care of switching the fan speeds based on the compressor operation / thermostat call.

Primary Heating Source: If the Air Handler has Electric Heat, be sure to configure the Symbio 700 UC for **Primary Heating Source – Not Installed** or you will get a Diagnostic for Options Module Comm Fail (The Symbio 700 will still turn the Indoor Fan on with a W1 or W2 call)

Connections Between the Condenser and the Air Handler

5 wires *(6 or 7 wires with electric heat)*

- Symbio Condenser Adapter Board J15-1 & 2 to Symbio Air Handler Relay Board J10-1 & 2. *(power for Air Handler RB)*
- Symbio Condenser Adapter Board J18-1 to Symbio Air Handler Relay Board J5-4. *(indoor fan run)*
- Symbio Condenser (UC) J16-2 to Symbio Air Handler Relay Board J5-1. *(EDC)*
- **Air Handler Relay Board J5-6 to? (*See Additional Thermostat Wire on next page)***
- Symbio Condenser (UC) J21-3 to Symbio Air Handler Relay Board J5-7. *(electric heat stage 1)* – ***do not make this connection for Heat Pump condensers***
- Symbio Condenser (UC) J21-5 to Symbio Air Handler Relay Board J5-8. *(electric heat stage 2)*



Additional Thermostat Wire *(based on condenser)*

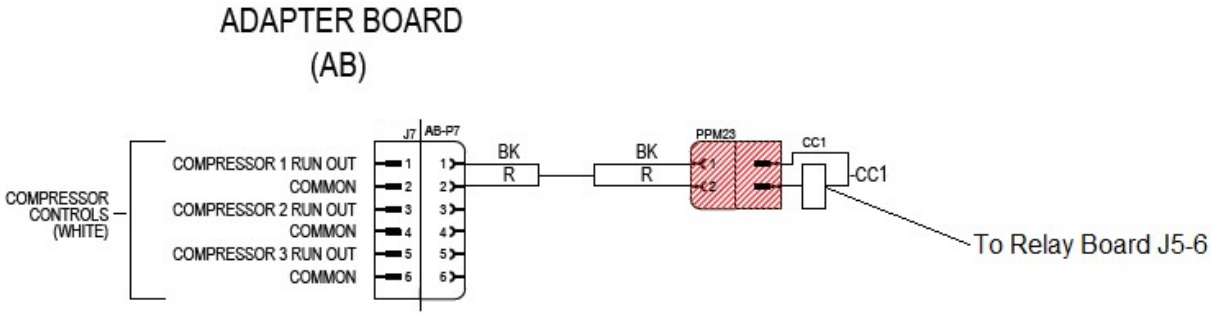
Single Compressor Condenser

Splice a wire to Condenser Adapter Board J7-1 (or the 24 VAC hot wire on the contactor coil), connect the other end to Air Handler Relay Board J5-6

Theory of Operation

In fan only operation the Air Handler will run Low Speed.

When the Symbio 700 calls for compressor operation the Air Handler will switch to High Speed.



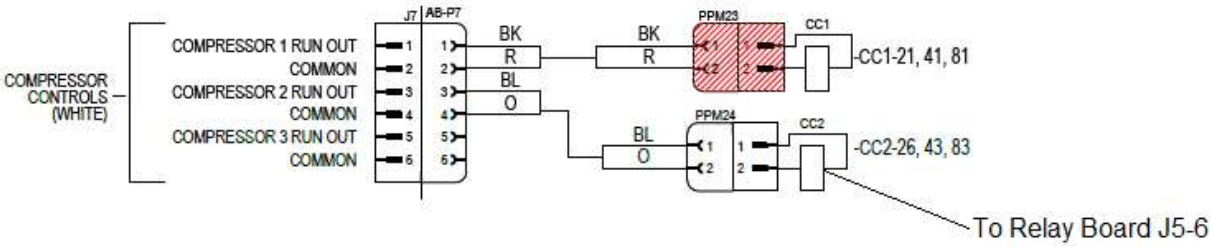
Dual Compressor Condenser (except for 10 and 20 ton)

Splice a wire to Condenser Adapter Board J7-3 (or the 24 VAC hot wire on the contactor coil), connect the other end to Air Handler Relay Board J5-6

Theory of Operation

In fan only or one compressor operation the Air Handler will run Low Speed.

When the Symbio 700 calls for two compressor operation the Air Handler will switch to High Speed.



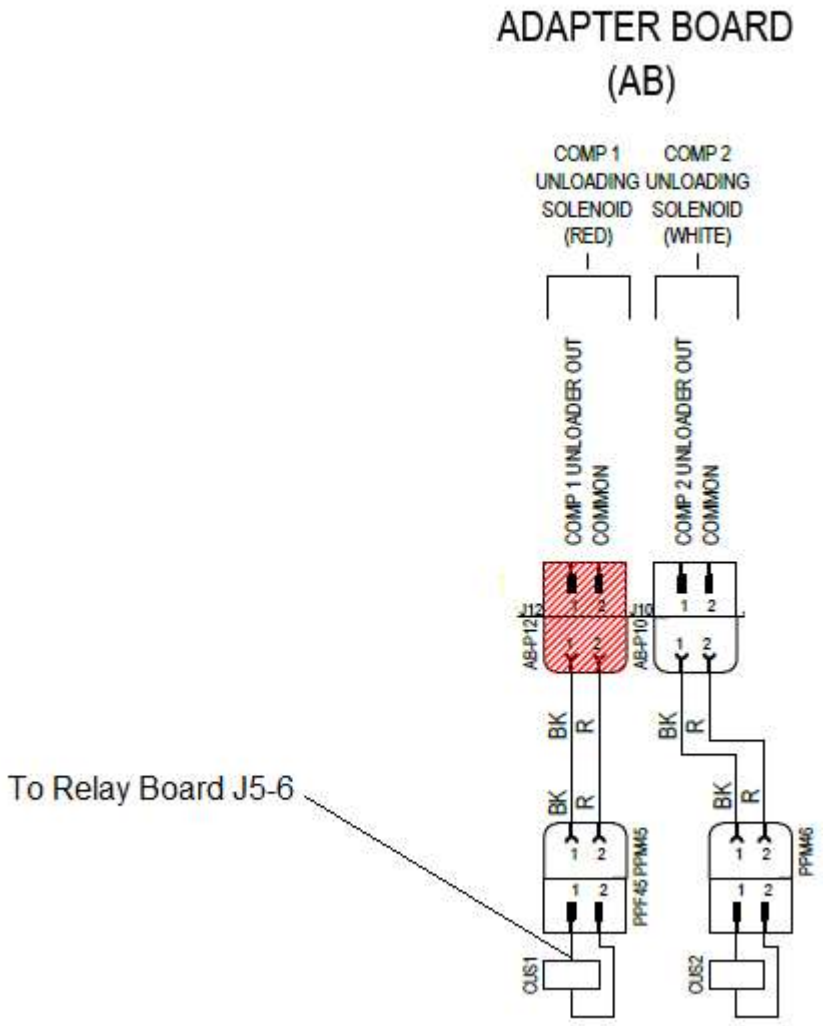
Dual Compressor Condenser 10 and 20 ton

Splice a wire to Condenser Adapter Board J12-1, connect the other end to Air Handler Relay Board J5-6.

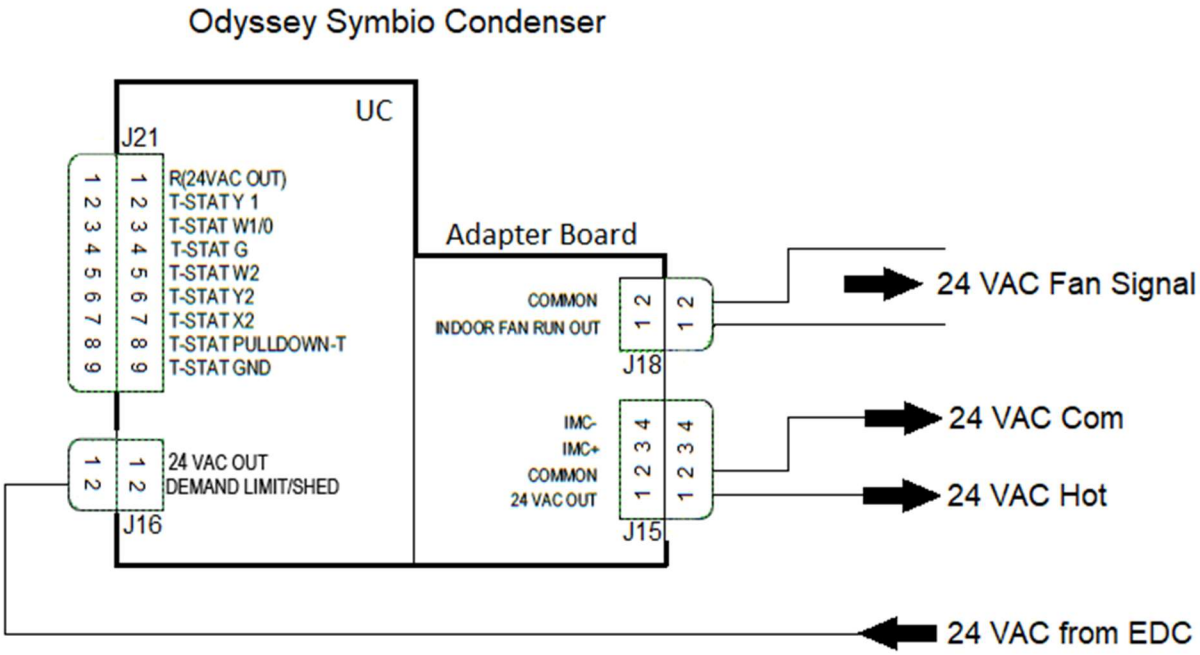
Theory of Operation

In fan only or unloaded compressors operation the Air Handler will run Low Speed.

When the Symbio 700 energizes AB J12-2 (loads the compressors up) the Air Handler will switch to High Speed.



Wiring a Symbio Condenser to a Generic 24 VAC Controlled Air Handler



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Twinning Odyssey Symbio Condensers Example

This diagram is an example to give you an idea of how to use isolation relays to twin two Odyssey Symbio condensers.

Light Commercial Tech Support will not size or specify any component part numbers needed to twin two condensers.

This diagram may not exactly match your application but using this diagram and the specific unit schematics you are working with; you should be able to come up with a solution that needs your needs.

Light Commercial Tech Support will not generate specific diagrams for specific applications.