Pairing B Wiring and Setup: Symbio Condenser or Heat Pump with SZVAV / 2 Speed Air Handler

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Condenser: Odyssey Condenser with Symbio 700 Controls

AHU: Odyssey AHU with Symbio 700 boards and model number digit 15 = D

Symbio 700 Quick Links

- Symbio™ 700 - Where to download the Service & Installation Mobile Phone App
- Symbio™ 700 - Bluetooth Connection Instructions
- Symbio™ 700 - Precedent or Odyssey - How to configure or edit configurations using the Mobile Phone App

How many wires do I need?

1 - Up to 7 conductor thermostat wire between the thermostat OR zone sensor and condenser

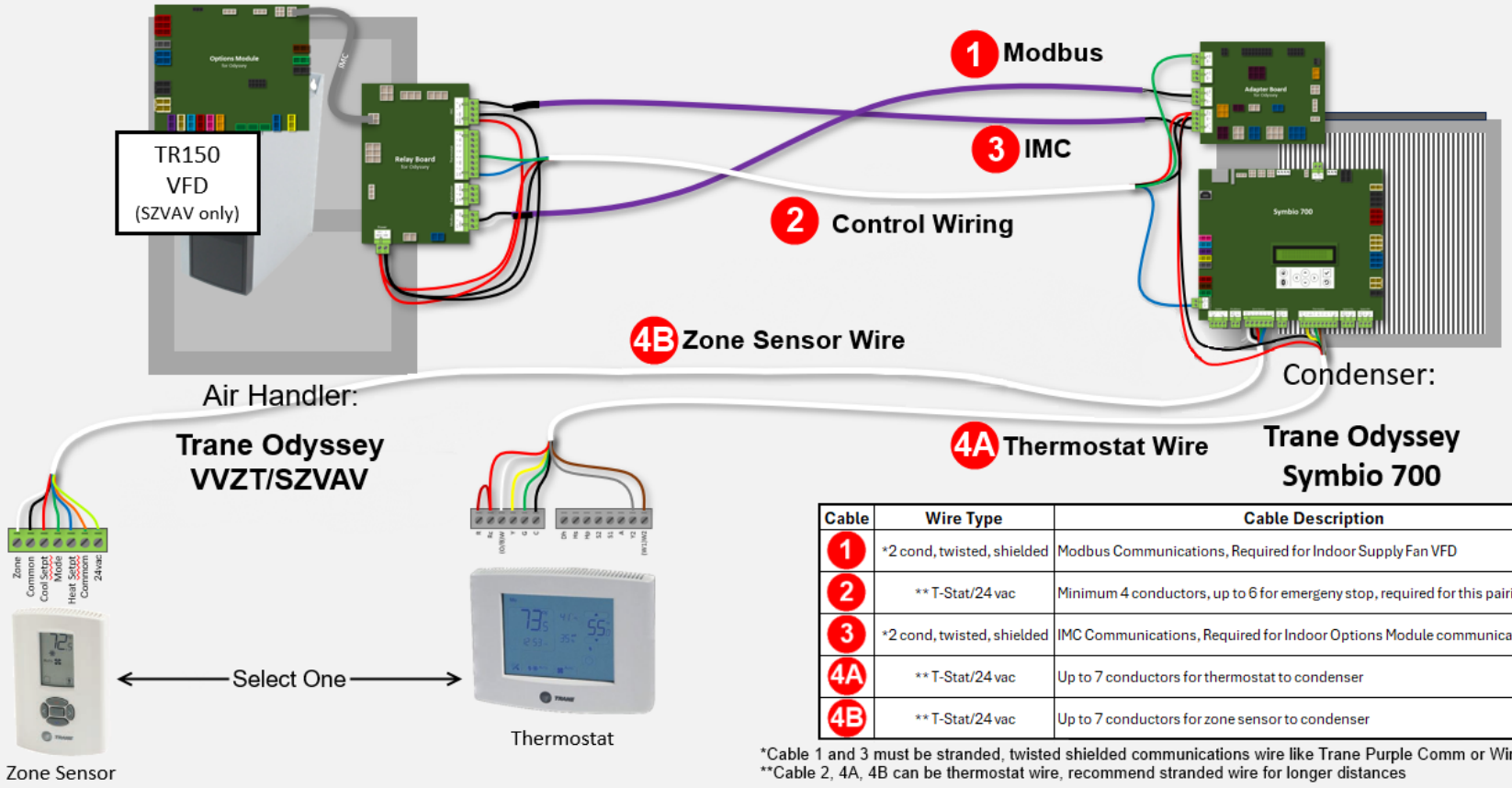
1 - Up to 6 conductor control wire between the AHU and condenser

2 - 2 conductor twisted, stranded, twisted, shielded communication wires between the AHU and condenser.

Cable Identification

Pairing B (Thermostat or Zone Sensor)

Odyssey SZVAV AHU (15th digit = D) with Odyssey Condenser w/ Symbio 700 Controls



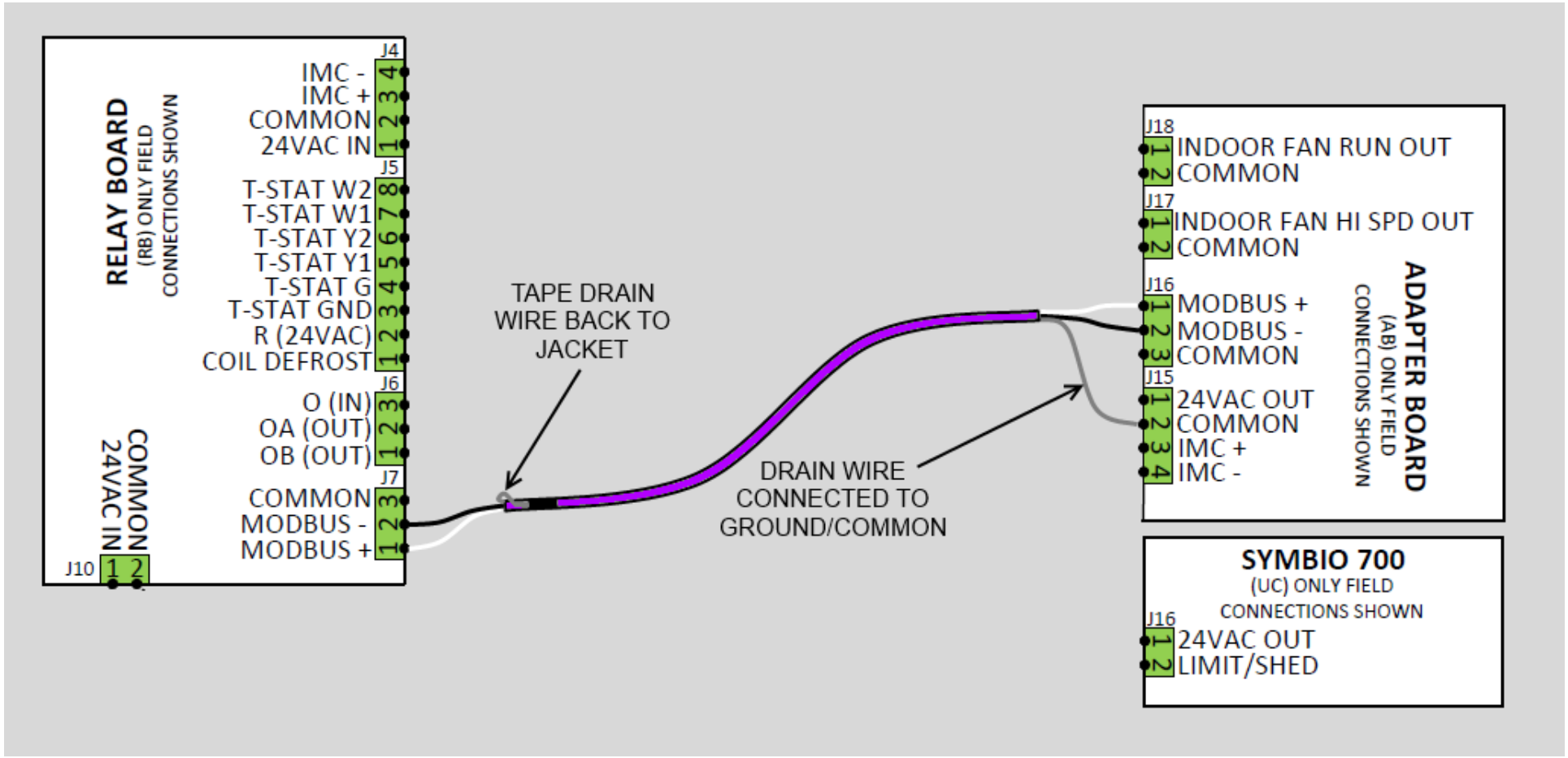
Cable	Wire Type	Cable Description
1	*2 cond, twisted, shielded	Modbus Communications, Required for Indoor Supply Fan VFD
2	** T-Stat/24 vac	Minimum 4 conductors, up to 6 for emergeny stop, required for this pairing
3	*2 cond, twisted, shielded	IMC Communications, Required for Indoor Options Module communications
4A	** T-Stat/24 vac	Up to 7 conductors for thermostat to condenser
4B	** T-Stat/24 vac	Up to 7 conductors for zone sensor to condenser

*Cable 1 and 3 must be stranded, twisted shielded communications wire like Trane Purple Comm or Windy City Wire #052003
**Cable 2, 4A, 4B can be thermostat wire, recommend stranded wire for longer distances

AHU Wiring to Condenser

Cable #1 Modbus Communication

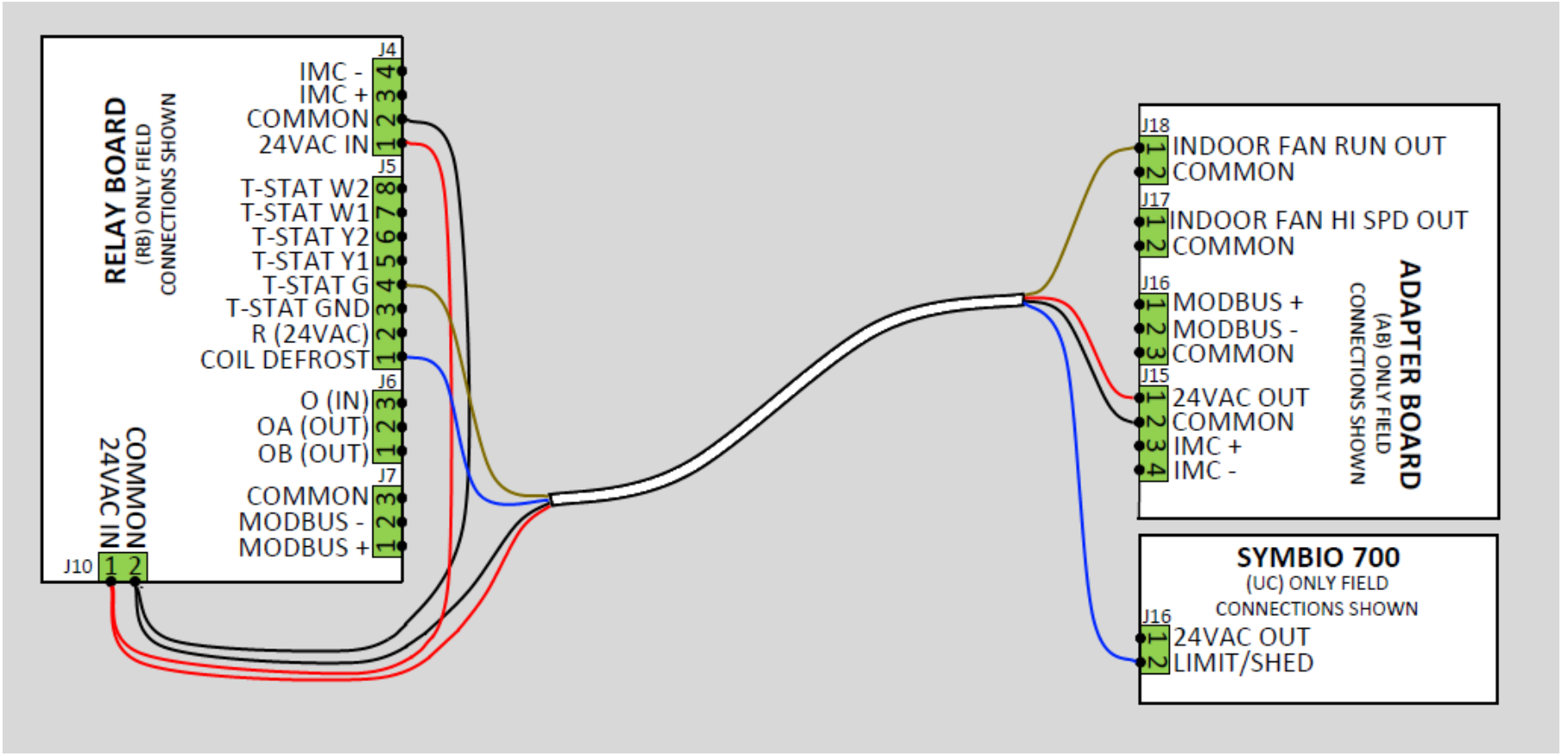
	AHU		to	Condenser		
Cable	Board	Terminal		Board	Terminal	Description
1	Relay Board	**J7-1**		Adapter Board	**J16-1**	Modbus + Communications for VFD
	Relay Board	**J7-2**		Adapter Board	**J16-2**	Modbus - Communications for VFD
				Adapter Board	**J15-2**	Comm drain (shield) wire, taped back at AHU, do not connect at Relay Board



AHU Wiring to Condenser
Cable #2 Control Wiring

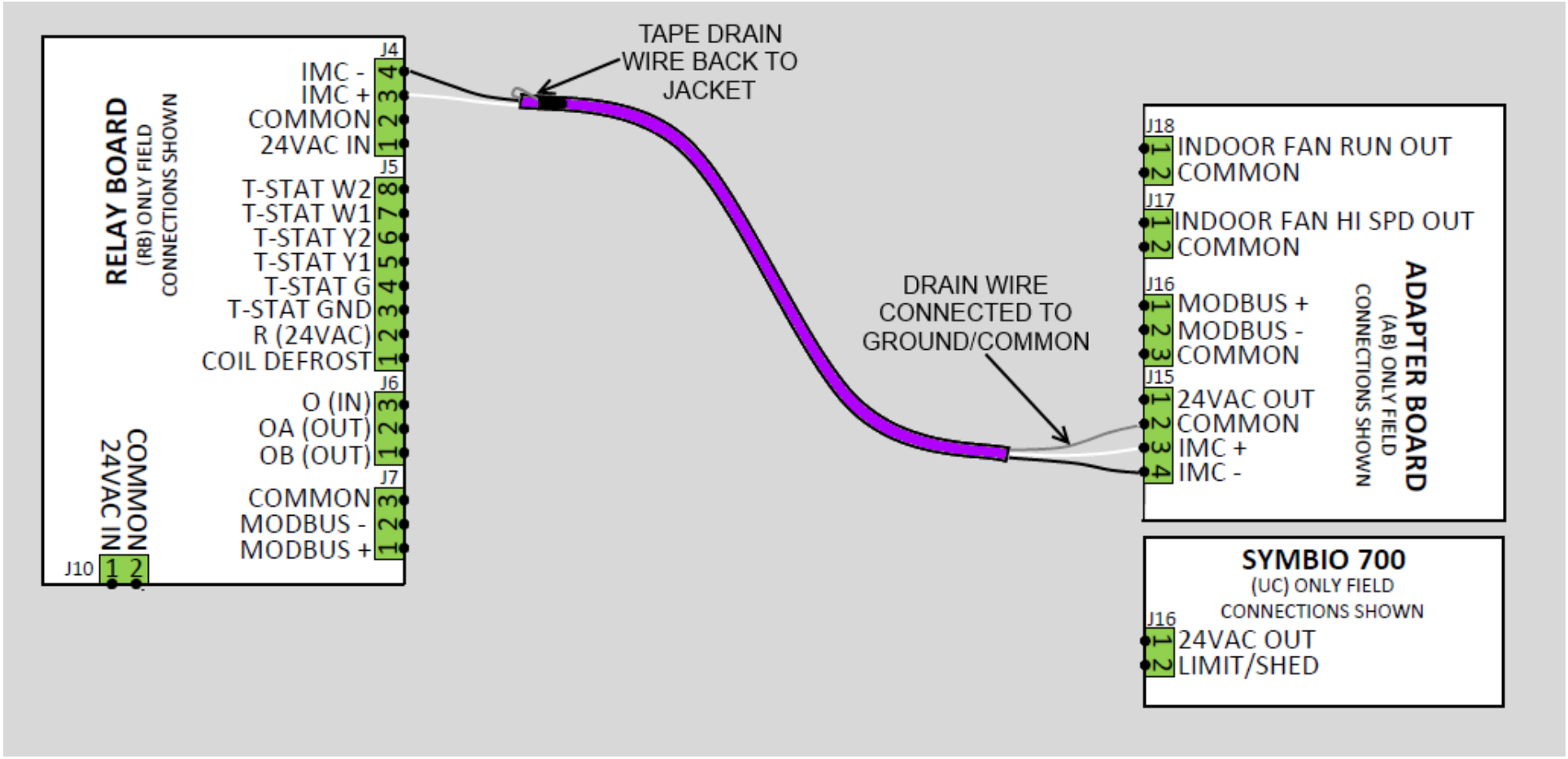
	AHU		to	Condenser		
Cable	Board	Terminal		Board	Terminal	Description
2	Relay Board	**J10-1**		Adapter Board	**J15-1**	24vac to power Relay Board
	Relay Board	**J10-2**		Adapter Board	**J15-2**	Comm/Neutral for Relay Board
	Relay Board	**J5-1**		Symbio 700	**J16-2**	Evap coil frostat, compressor shutdown
	Relay Board	**J5-4**		Adapter Board	**J18-1**	Fan interlock for electric heat operation

N/A	Relay Board	**J10-1**		Relay Board	**J4-1**	24vac to IMC link, power for Indoor OM
	Relay Board	**J10-2**		Relay Board	**J4-2**	24 neutral/common to IMC link, power for Indoor OM



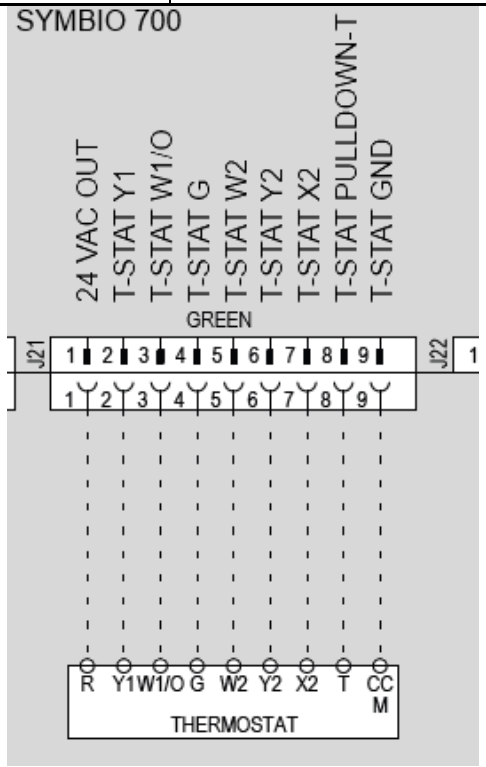
AHU Wiring to Condenser
Cable #3 IMC Communication

	AHU		to	Condenser		
Cable	Board	Terminal		Board	Terminal	Description
3	Relay Board	**J4-3**		Adapter Board	**J15-3**	IMC + Communications for Indoor OM
	Relay Board	**J4-4**		Adapter Board	**J15-4**	IMC - Communications for Indoor OM
				Adapter Board	**J15-2**	Comm drain (shield) wire, taped back at AHU, do not connect at Relay Board



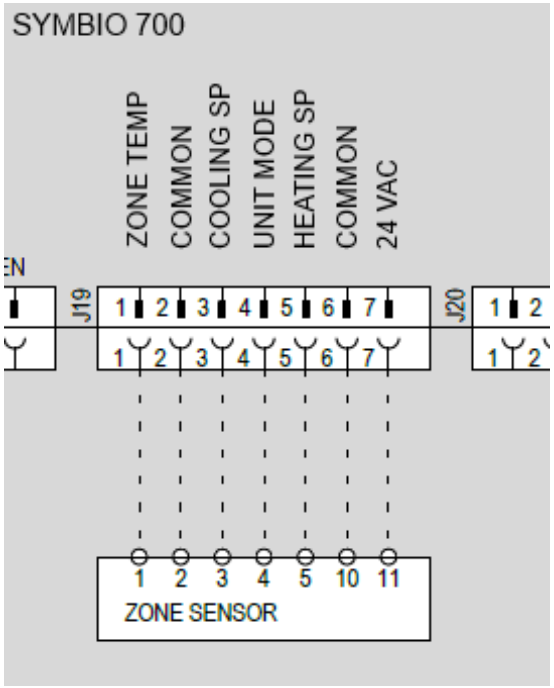
Condenser to Thermostat
Cable #4A Thermostat Wiring

	Condenser		to	Thermostat		
Cable	Board	Terminal		Board	Terminal	Description
4A	Symbio 700	**J21-1 (24vac)**		Tstat	**R**	24vac
	Symbio 700	**J21-2 (Y1)**		Tstat	**Y1**	Cool1 (Heat call on Heat Pump)
	Symbio 700	**J21-3 (W1/O)**		Tstat	**W1 or O/B**	Heat1 (reversing valve call on Heat Pump)
	Symbio 700	**J21-4 (G)**		Tstat	**G**	Fan
	Symbio 700	**J21-5 (W2)**		Tstat	**W2**	Heat2 (Aux heat on Heat Pump)
	Symbio 700	**J21-6 (Y2)**		Tstat	**Y2**	Cool2
	Symbio 700	**J21-7 (X2)**		Tstat	**Aux**	Emergency Heat on Heat Pump (will shut down compressors)
	Symbio 700	**J21-8 (T)**		Tstat	**Pulldown**	Heat Anticipator/Pulldown (not commonly used)
	Symbio 700	**J21-9 (Comm)**		Tstat	**Comm**	Common/Neutral for tstat



Condenser to Thermostat
Cable #4B Thermostat Wiring

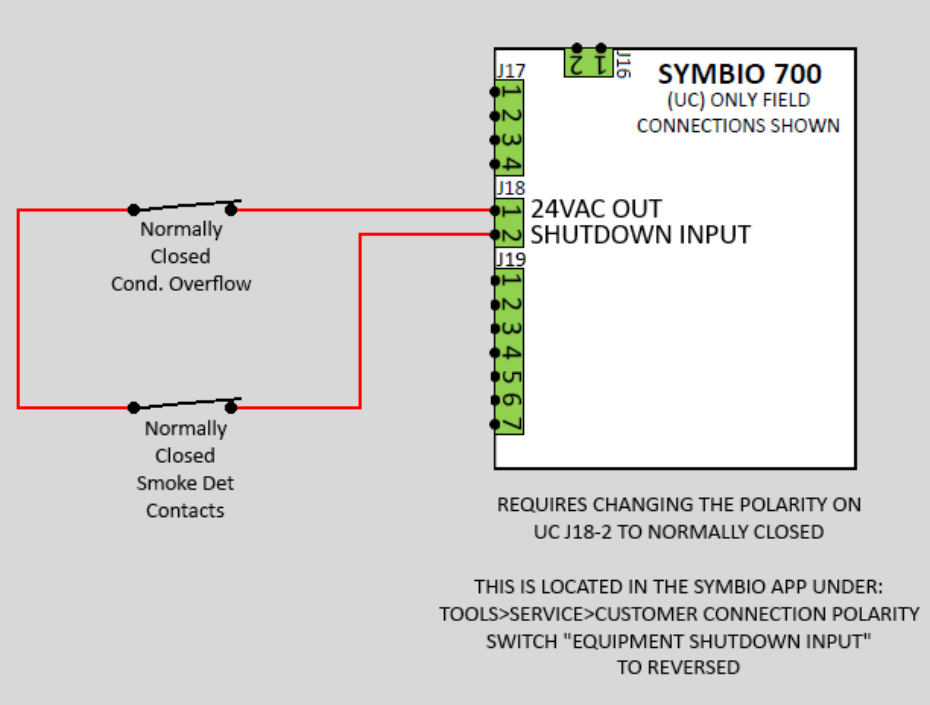
	Condenser		to	Zone Sensor		
Cable	Board	Terminal		Board	Terminal	Description
4B	Symbio 700	**J19-1**		Zone Sensor	**1**	Zone Temperature
	Symbio 700	**J19-2**		Zone Sensor	**2**	Common
	Symbio 700	**J19-3**		Zone Sensor	**3**	Cooling Setpoint
	Symbio 700	**J19-4**		Zone Sensor	**4**	Unit Mode
	Symbio 700	**J19-5**		Zone Sensor	**5**	Heating Setpoint
	Symbio 700	**J19-6**		Zone Sensor	**6**	Common
	Symbio 700	**J19-7**		Zone Sensor	**7**	24 vac



*BAYSENS135A Shown

Emergency Stop Wiring
From Stop Devices to Symbio 700

	Stop Device		to	Condenser		
Cable	Board	Terminal		Board	Terminal	Description
N/A	Stop Device	**Common**		Symbio 700	**J18-1**	24vac Out to Stop Devices
	Stop Device	**Norm. Closed**		Adapter Board	**J18-2**	24vac Input from Stop Devices



Wiring above reflects normally closed safeties. Typically, condensate overflow switches (or pan switches) are normally closed devices. If using normally open devices, they can be wired in parallel, and the Customer Connection Polarity does not need to be changed.

For more information see the links below:

- Trane Commercial Help Center - *LCU Symbio 700 Emergency Stop Input
- Trane Commercial Help Center - Symbio 700 Demand Limit and Emergency Stop Polarity

Configuring Symbio 700

Odyssey condensers can be paired with many different Odyssey AHUs, 3rd party AHUs and indoor coil assemblies. Due to this, Symbio 700 must be configured for the connected AHU, installed accessories, and controlling sensor/thermostat.

For Variable Volume Zone Temperature (VVZT or formerly known as SZVAV) operation set the configuration as follows (requires zone sensor):

- **System Type** = VVZT (requires zone sensor for actual VVZT operation, tstat will operate as CVZT)
- **Efficiency** = Standard B
- **Indoor Fan Type** = Variable Speed (should set automatically)
- **Space Controller** = Single Setpoint Zone sensor, or Dual Setpoint Zone Sensor
- **Frostat** = Installed (should install automatically)
- **Discharge Temperature Sensor** = Installed (should install automatically)
- **Field installed electric heat only**
    - **TTA condenser**
        - **Primary Heating Source** = Electric
        - **Primary Heating Stages** = 1 or 2 (depending on electric heat kit stages)
    - **TWA condenser**
        - **Secondary Heating Source** = Electric
        - **Secondary Heating Stages** = 1 or 2 (depending on electric heat kit stages)

For Multispeed fan operation set the configuration as follows:

- **System Type** = CVZT (thermostat or zone sensor)
- **Efficiency** = Standard B
- **Indoor Fan Type** = Multi Speed
- **Space Controller** = Conventional Thermostat, Single Setpoint Zone sensor, or Dual Setpoint Zone Sensor
- **Frostat** = Installed
- **Discharge Temperature Sensor** = Installed (with zone sensor will use DAT logic for compressor staging) or Not Installed

- **Field installed electric heat only**
  - **TTA condenser**
    - **Primary Heating Source** = Electric
    - **Primary Heating Stages** = 1 or 2 (depending on electric heat kit stages)
  - **TWA condenser**
    - **Secondary Heating Source** = Electric
    - **Secondary Heating Stages** = 1 or 2 (depending on electric heat kit stages)

Once changes are complete, hit the check mark (APPLY on Apple devices) at the top of the screen (if the check mark is grey, look for options with --- and fill them in)

After changes are saved, the condenser will automatically start looking for the VFD and Indoor Options Module (big board in AHU).
The supply fan will engage with a call for fan.