TECHNICAL SERVICE BULLETIN

TSB C-GN-FN-0060

Date: November 11, 2024

To: All Service and Parts Managers

From: Technical Services Department

Subject: **Furnace Twinning for R-32 Systems**

The following information is being provided to service technicians for twinning furnaces when one or both outdoor units have R-32 refrigerant. The twinning information found in our 1-stage and 2-stage multi-speed furnace Installation and Operations manuals will continue to be the process for twinning if **both** outdoor units have R-410A (or R-22) refrigerant. NOTE: If furnaces are already R-32 compatible, meaning that they already include Refrigerant Detection System (RDS) logic, but **both** outdoor units have R-410A refrigerant, the RDS must be disabled.

If one or both outdoor units have R-32, the twinning process will be different based on various scenarios. Our new Twinning Installation and Operations manual (**IO-2001**) provides the solution for each scenario. It is very important to install the right solution for R-32 refrigerant mitigation based on the furnaces, evaporator coils and outdoor units being twinned. **IO-2001** will also provide solutions when accessories such as electronic air cleaners, UV lights, humidifiers, etc. are installed with these furnaces.

As always, furnaces must be identical (same model, same control board) and must be set up with the same blower speeds for heating, cooling and continuous fan operations. Only furnaces with multi-speed EEM or PSC blower motors can be twinned. Furnaces with variable speed ECM blower motors cannot be twinned.

Twinning Installation and Operations Manual (**IO-2001**)

Please read and follow these instructions carefully.

⚠ WARNING

FAILURE TO FOLLOW THE WIRING DIAGRAMS SHOWN IN THIS MANUAL MAY CAUSE ONE OR BOTH OF THE TWINNED FURNACES TO NOT GO INTO MITIGATION MODE IN CASE OF AN R-32 REFRIGERANT LEAK. PLEASE FOLLOW THE INSTRUCTIONS IN THIS MANUAL CAREFULLY.

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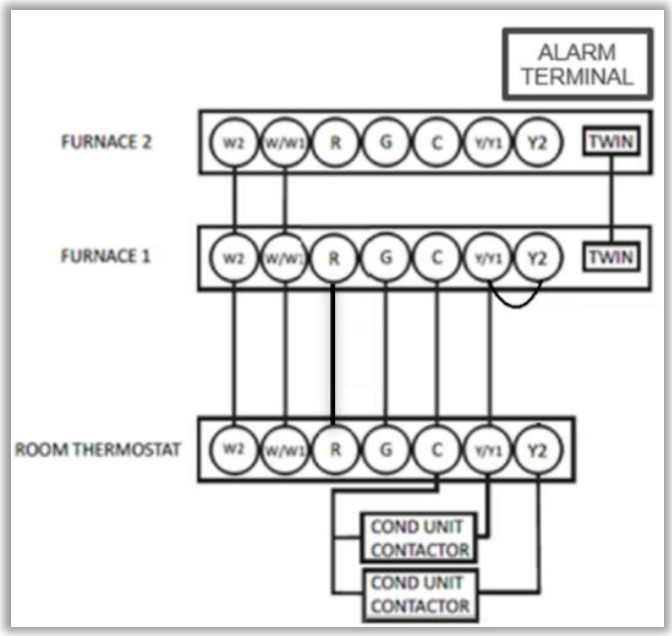
Scenario 1: One R-410A system and One R-32 System with No Accessories or Zoning Installed

Furnace 1 **must** be the R-32 system (24VAC R from Furnace 1 is connected directly to the thermostat). If Furnace 2 has built-in R-32 refrigerant detection, this feature must be disabled.

NOTE: If the R-32 system experiences a refrigerant leak and enters mitigation mode, this wiring will ensure all HVAC functions have been turned off to both systems and the blower is running as required.

In this Scenario, use the R-32 verification function to verify mitigation mode is operational in heating and cooling operations. Refer to the R-32 furnace Installation and Operations manual for R-32 verification.



Scenario 1 Wiring

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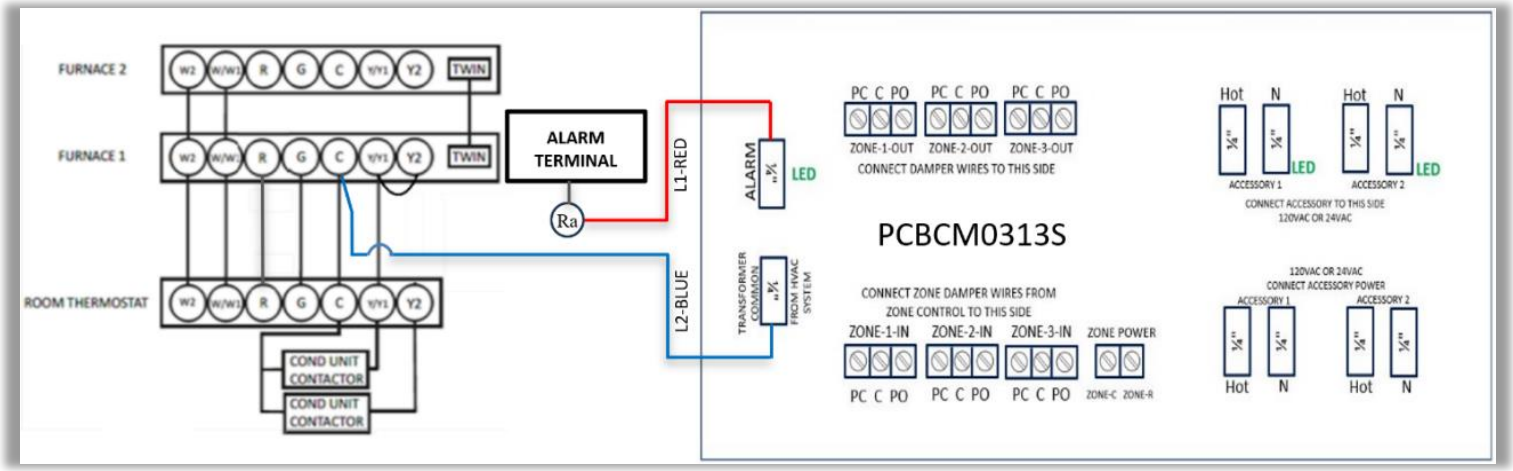
Scenario 2: One R-410A System and One R-32 System with Accessories and/or Zoning Installed

Furnace 1 **must** be the R-32 system where 24VAC "R" from Furnace 1 is connected directly to the thermostat or zone board. If Furnace 2 has RDS built-in, this feature must be disabled.

Parts Needed: PCBCM0313S – This part will cover up to 3 zones and 2 accessories.



Scenario 2 Wiring

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Scenario 3: Two Integrated R-32 Furnaces with No Accessories or Zoning Installed

Furnace 1 "R" terminal is wired through the accessory relay on the zone/accessory board. Furnace 2 will control the zone/accessory board via its on-board "ALARM TERMINAL".

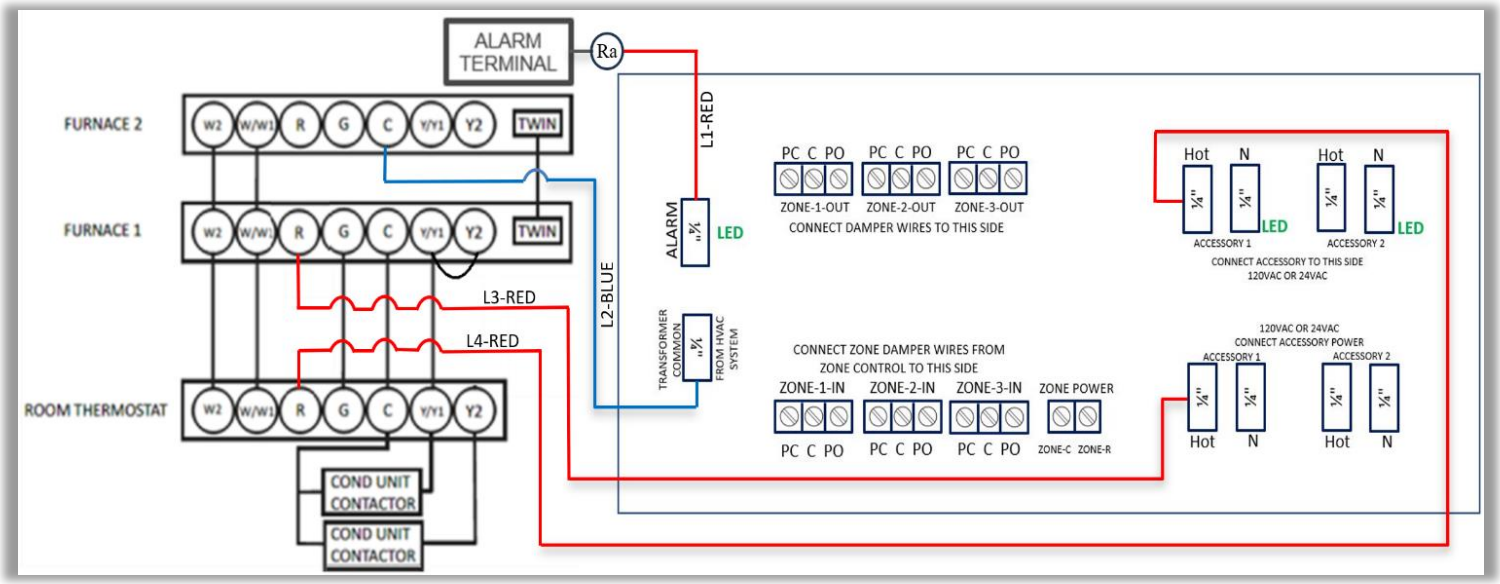
Parts needed: (1) PCBCM0313S.

When Furnace 1 Enters Mitigation:

- Furnace control removes 24VAC from "R" terminal – Thermostat signals are removed (Zone / Accessory board status is unchanged)
- Through twinning connection, Furnace 1 forces Furnace 2 to run the same mitigation airflow
- After mitigation, 24VAC from "R" is returned and system goes back to normal operation

When Furnace 2 Enters Mitigation:

- Furnace 2 energizes "Alarm Terminal" and opens the normally closed relay on the zone / accessory board
    - This disconnects the 24VAC signal from Furnace 1 to the thermostat – Thermostat signals are removed
- Through Twinning connection, Furnace 2 forces Furnace 1 to run the same mitigation airflow
- After Mitigation, the Alarm Terminal is turned off, zone/ accessory board returns to a normally closed status and system goes back to normal operation.



Scenario 3 Wiring

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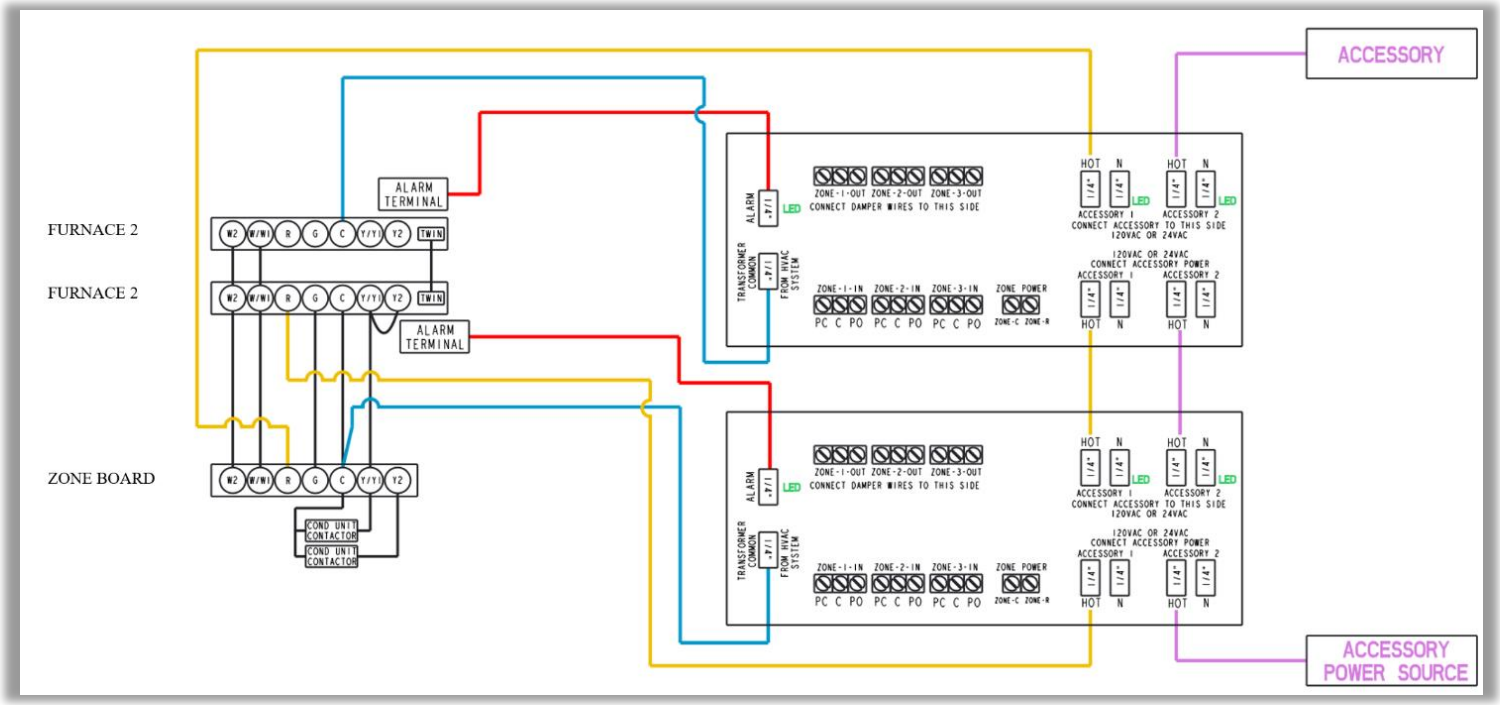
Scenario 4: Two integrated R-32 Furnaces with One Accessory

Parts needed: (2) PCBCM0313S.



Scenario 4 Wiring

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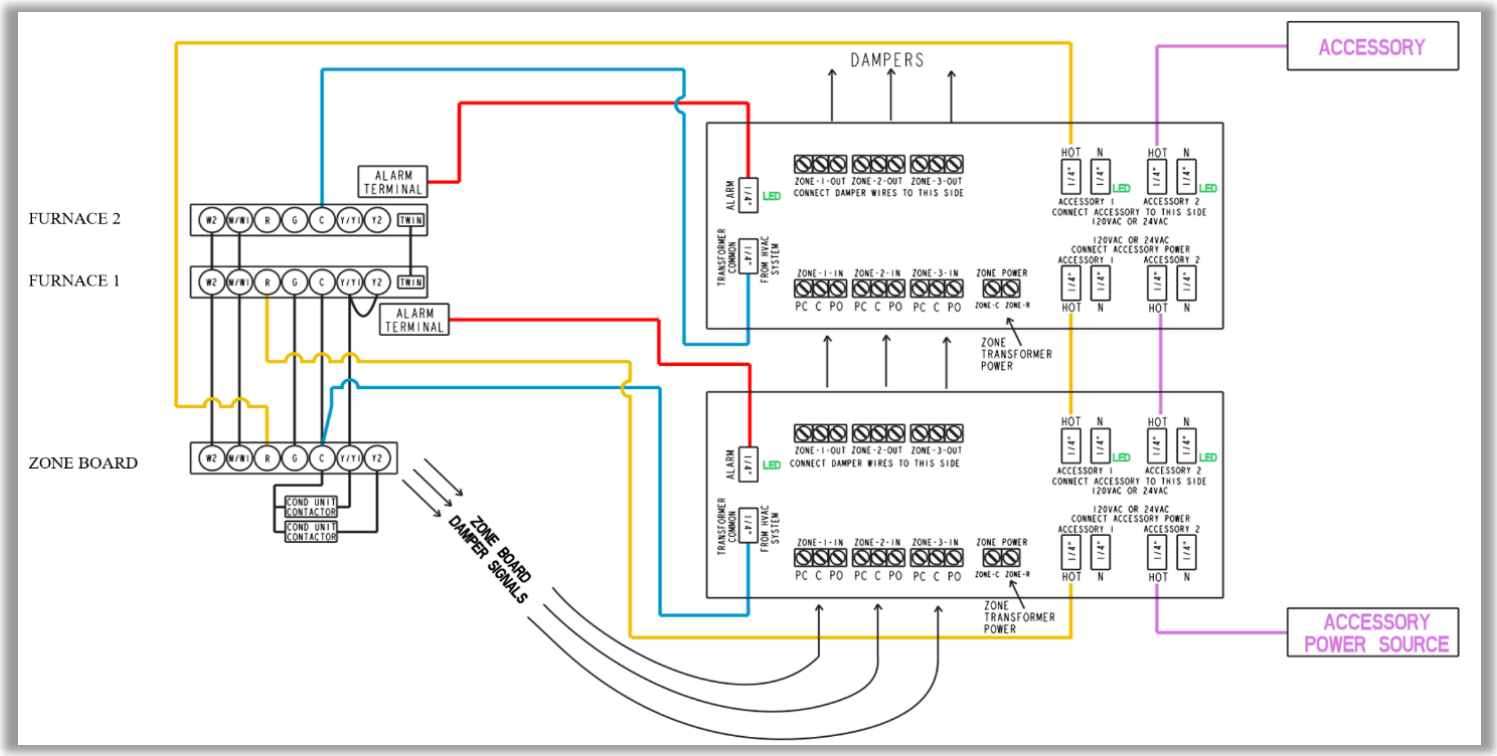
Scenario 5: Two Integrated R-32 Furnaces with One Accessory and Zoning

Parts needed: (2) PCBCM0313S



Scenario 5 Wiring

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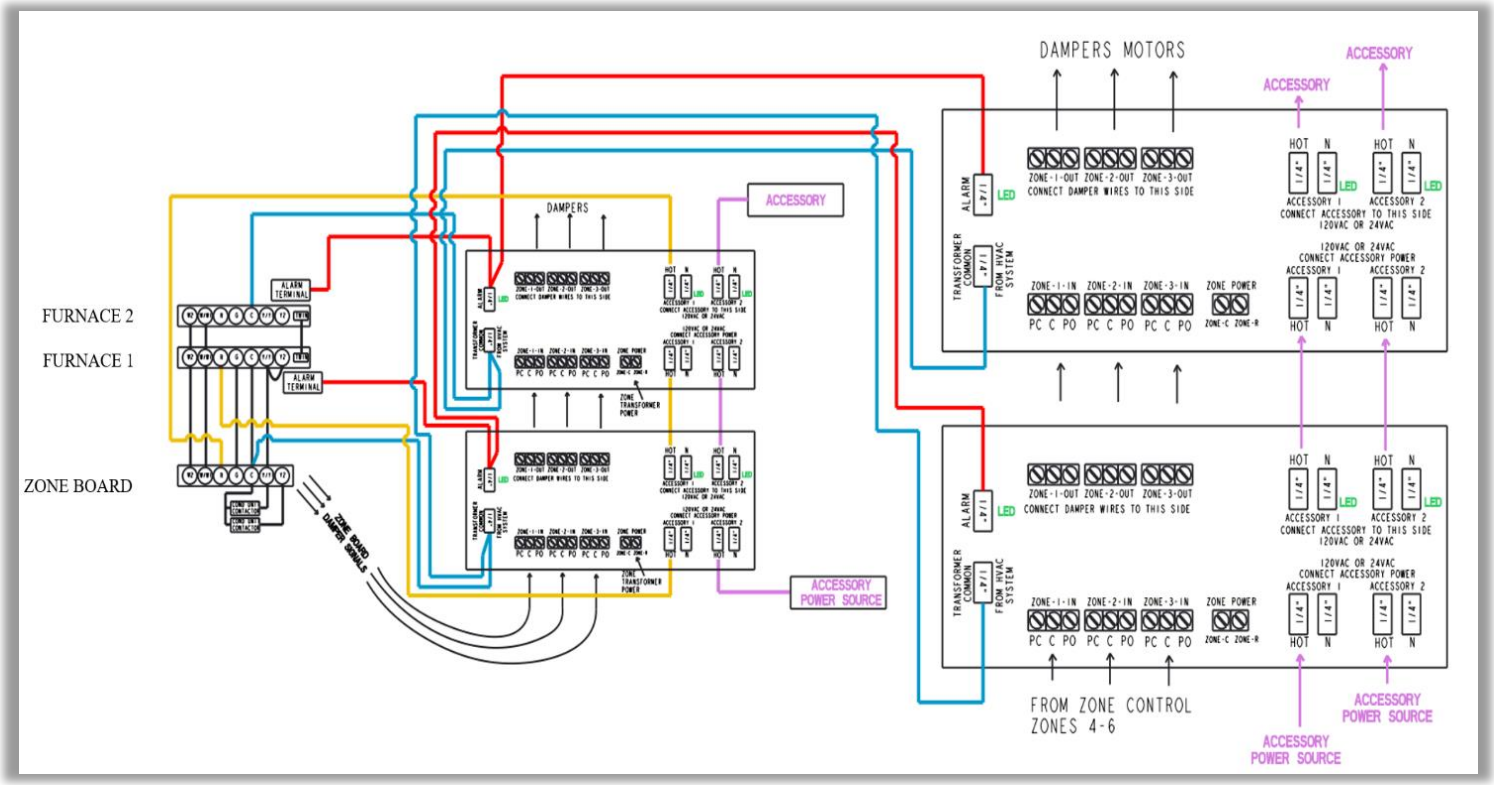
Scenario 6: Two Integrated R-32 Furnaces with 3 Accessories and 4 to 6 Zones.

Parts needed: (4) PCBCM0313S



Scenario 6 Wiring

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Scenario 7: Two R-410A Furnaces Paired with R-32 Outdoor Units with No Accessories or Zoning

Parts needed: (2) Furnace Integration Kits and (1) PCBCM0313S.

Furnace 1 (powers the thermostat): "Ro" Terminal from Furnace Integration Kit control board 1 is wired through the accessory relay on the zone/accessory board to the thermostat.

Furnace Integration Kit 1 Enters Mitigation:

- Furnace Integration Kit control board removes 24VAC from "R" of the thermostat connector – Thermostat signals are removed (zone/accessory board status is unchanged)
- Furnace 1 runs blower tap associated with Y + Y2 + G inputs and tells Furnace 2 to do the same via twinning communications
- After mitigation, 24VAC from Furnace Integration Kit control "R" is returned and system goes back to normal operation

Furnace 2: Furnace Integration Kit control board 2 will control the zone/accessory board via its on-board "ALARM TERMINAL".

Furnace Integration Kit control board 2 enters mitigation:

- Furnace Integration Kit control board 2 energizes "Alarm Terminal" and opens the accessory relay
    - This disconnects the 24VAC signal between Furnace Integration Kit control board 1 to the thermostat – Thermostat signals are removed
- Furnace 1 runs blower tap associated with Y + Y2 + G inputs and tells Furnace 2 to do the same via twinning communications
- After Mitigation, the Alarm Terminal is turned off, zone/accessory board returns to a normally closed status and system goes back to normal operation.

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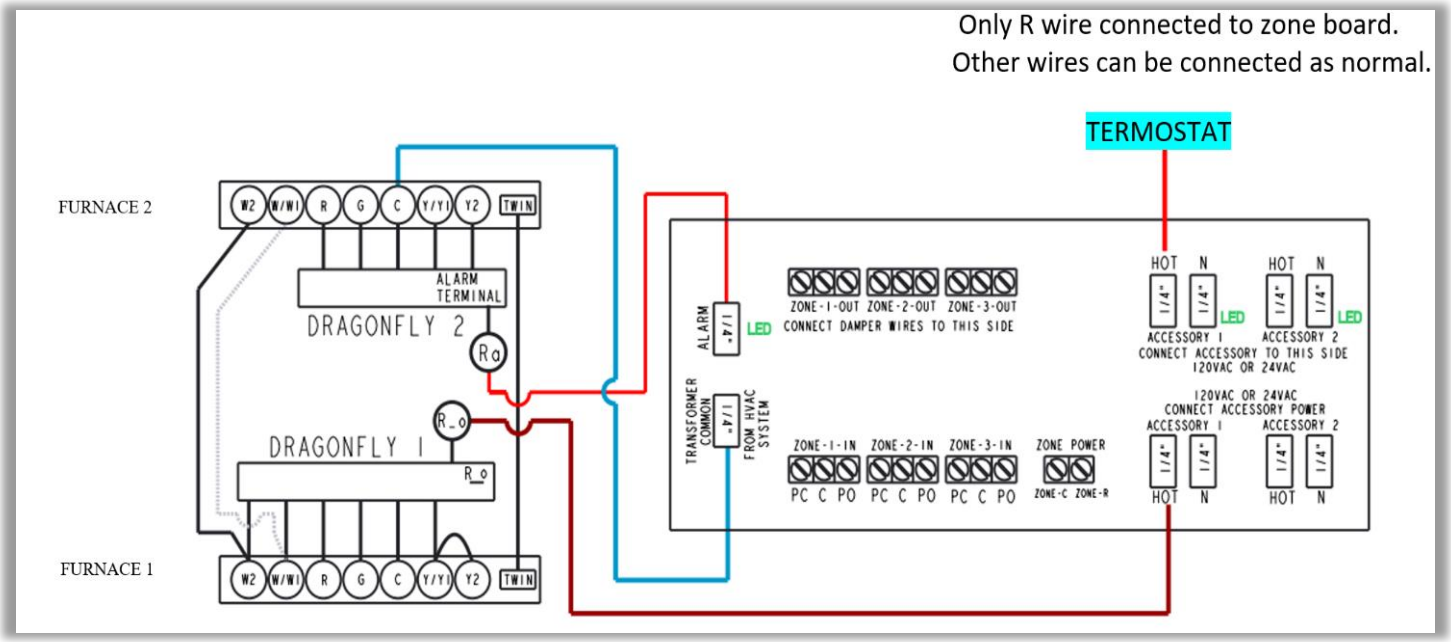

Scenario 7 Wiring

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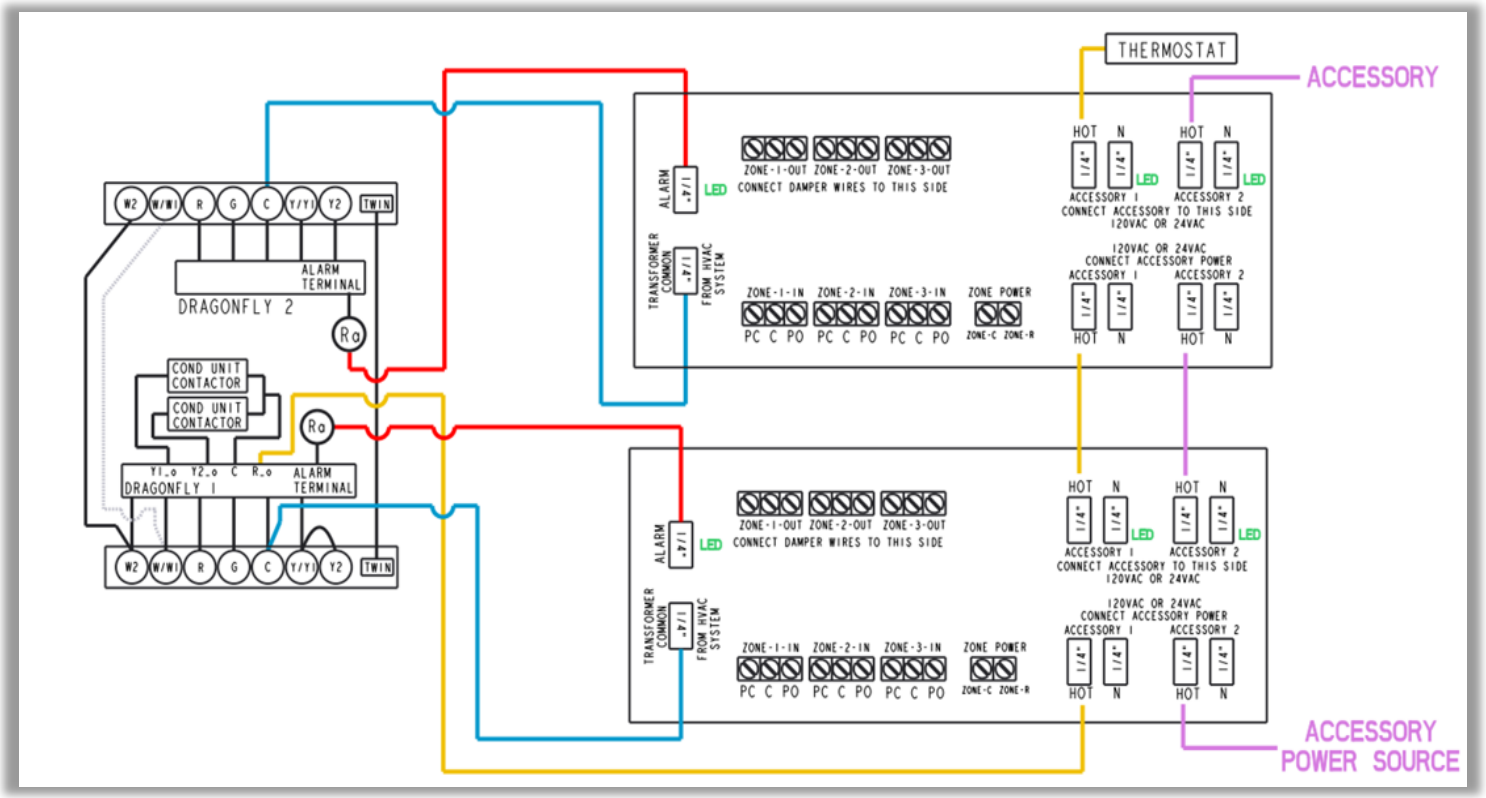
Scenario 8: Two R-410A Furnaces Paired with R-32 Outdoor Units and One Accessory

Parts needed: (2) Furnace Integration Kits and (2) PCBCM0313S.

NOTE: For options with more accessories and/or zones, see Scenario 6 for using (4) PCBCM0313S boards.



Scenario 8 Wiring

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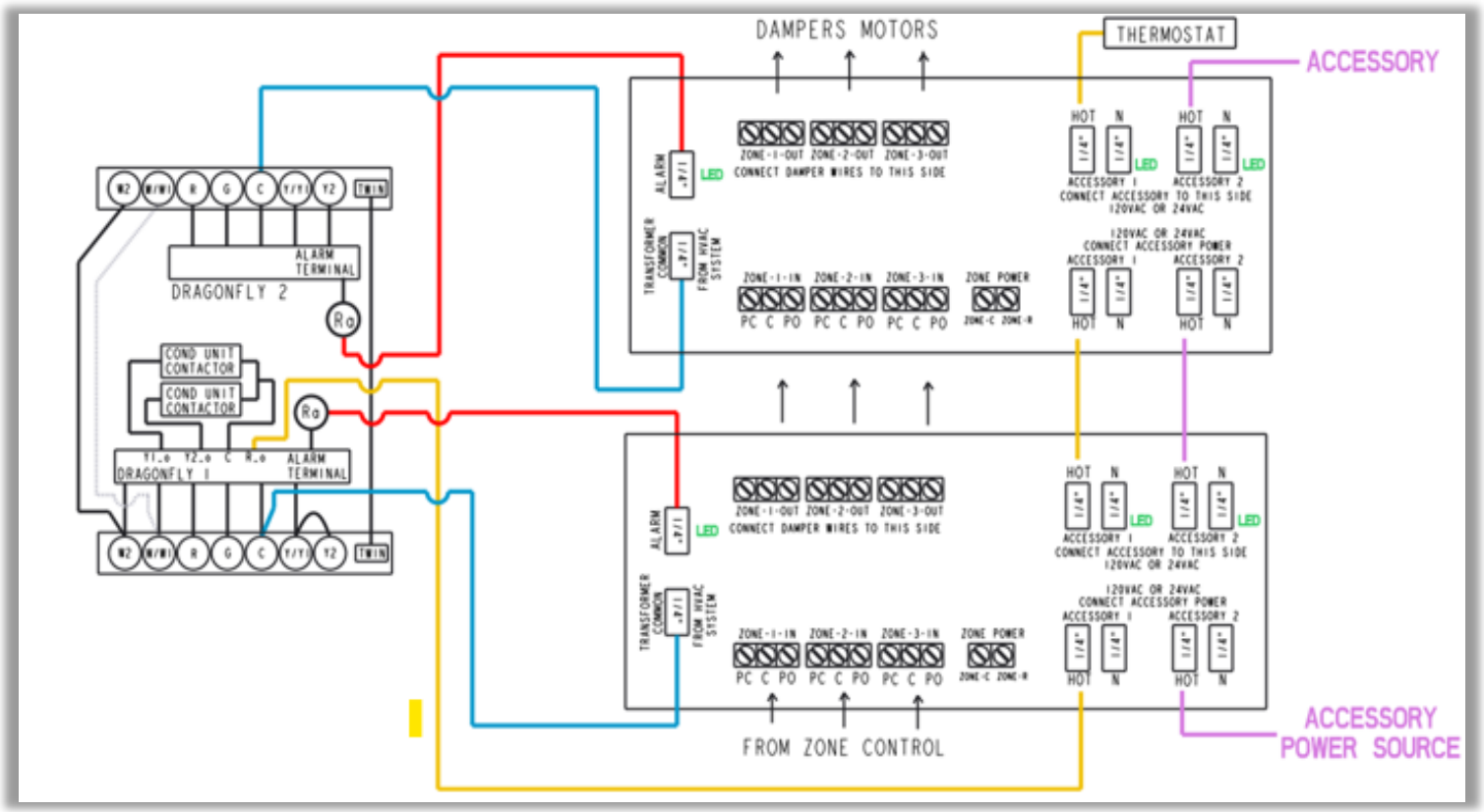
Scenario 9: Two R-410A Furnaces Paired with R-32 Outdoor Units with One Accessory and Zoning

Parts needed: (2) Furnace Integration Kits and (2) PCBCM0313S

NOTE: For options with more accessories and/or zones, see Scenario 6 for using (4) PCBCM0313S boards.



Scenario 9 Wiring

If you have technical questions, please call 1-855-DAIKIN1, option 3, or e-mail TechnicalServicesDaikin@daikincomfort.com.