

# Zone Control Application for Guardian (R454B)

DFS zoning application:

This guide is intended to illustrate how to pair our single-phase Guardian (R454B) Outdoor Unit (ODU) and JHE Multi-position AHU to the Honeywell HZ432 TrueZone control panel.

Further described in the guide, are the requirements for a successful implementation and completion of a zoned system. The system selected will depend on the entire load calculation required for all the zones.



HVAC EQUIPMENT

M20001

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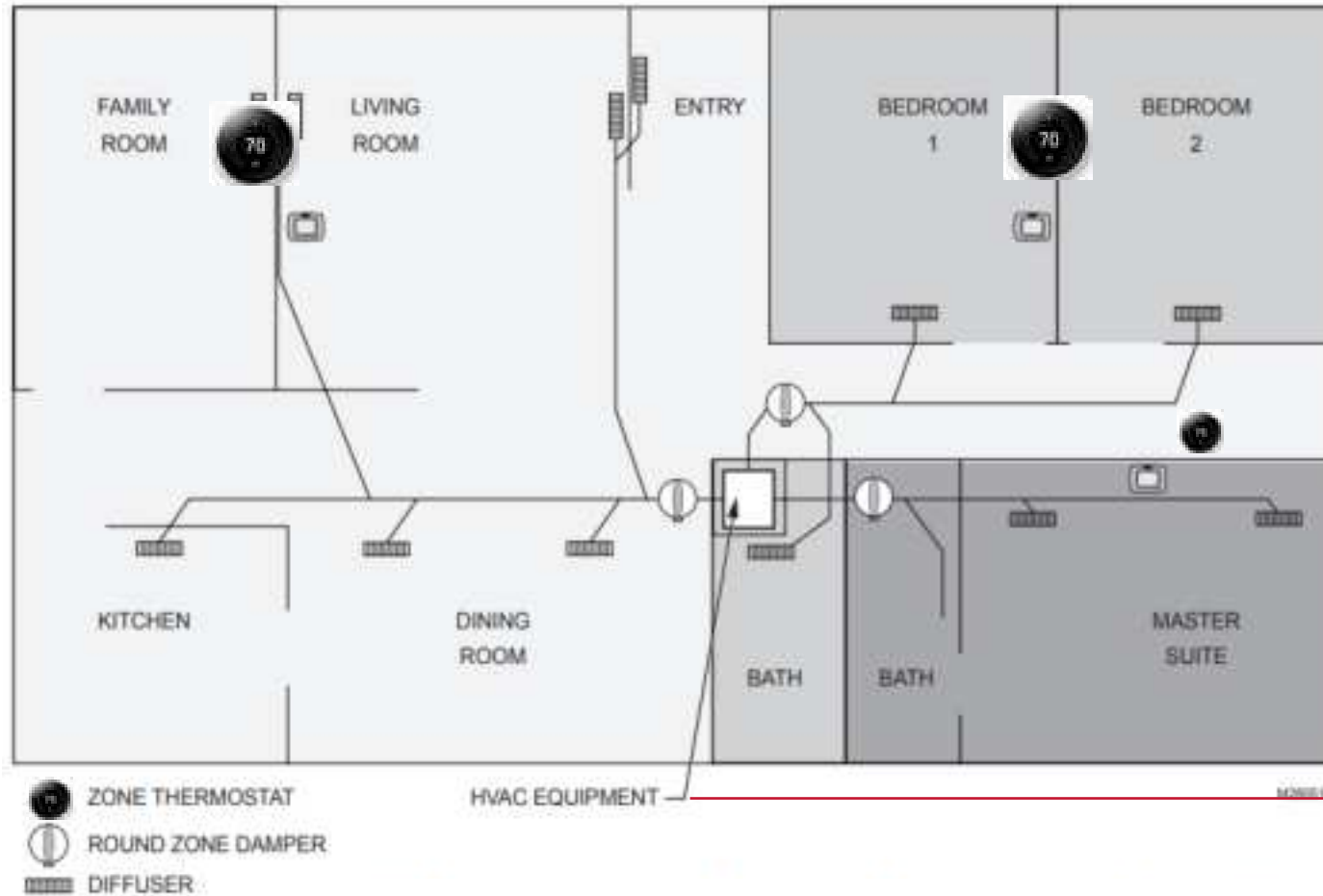
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# Zone Layout

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**Example below: Shows a typical layout of the zones within a residential home.**



# System Equipment

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## Guardian(R454B) Equipment:

Guardian single phase 208/230V  
HP Heat Pump Units, 24k to 48k  
Outdoor Unit



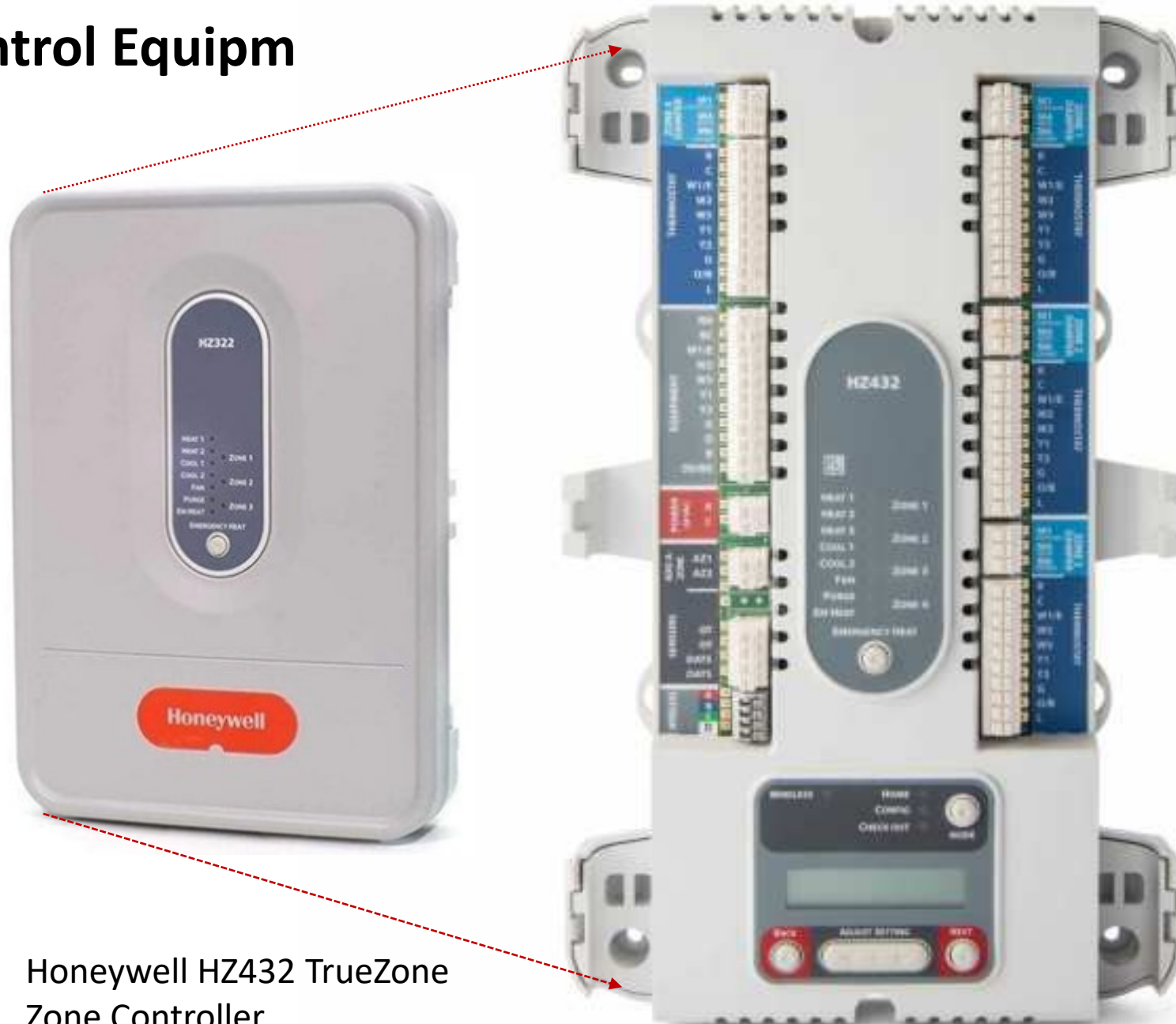
Unit Models:  
UPC24CN23STG1, UPC36CN23STG1,  
UPC48CN23STG1

JHE Multi-Position Air Handler



Unit Models:  
JHE18B5AB2SS1, JHE24B5AC2SS1,  
JHE36B5CD2SS1, JHE48C5CG2SS1

## Zone Control Equipm



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Honeywell HZ432 TrueZone  
Zone Controller

# Zoning System Zone Damper Models (Honeywell):



ZD Series Zone Damper  
Spring-Open  
Power-Closed



RRD Series Zone Damper  
Power-Open  
Power Closed



ARD Series Zone Damper  
Spring-Open  
Power-Closed



# Zoning System Bypass Damper Model (Honeywell):

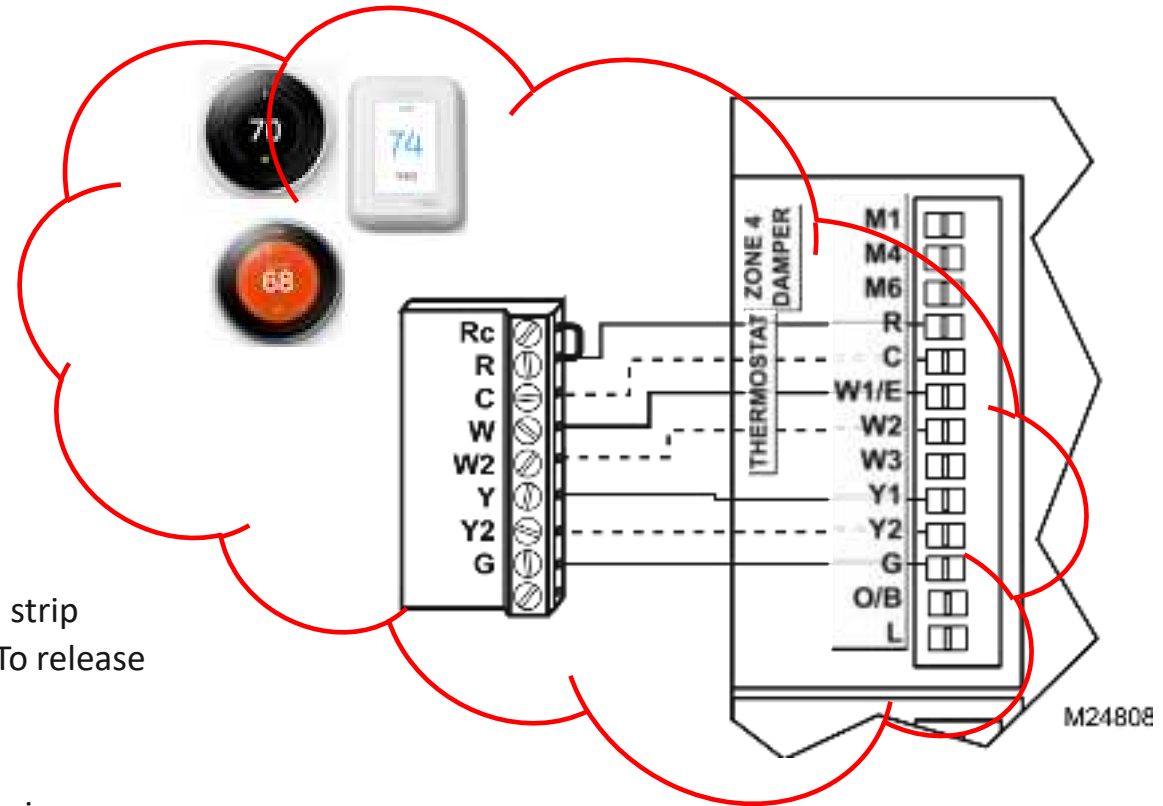


SPRD Series  
Barometric by-pass damper (Static Pressure Control)

# Zoning Wiring Diagrams

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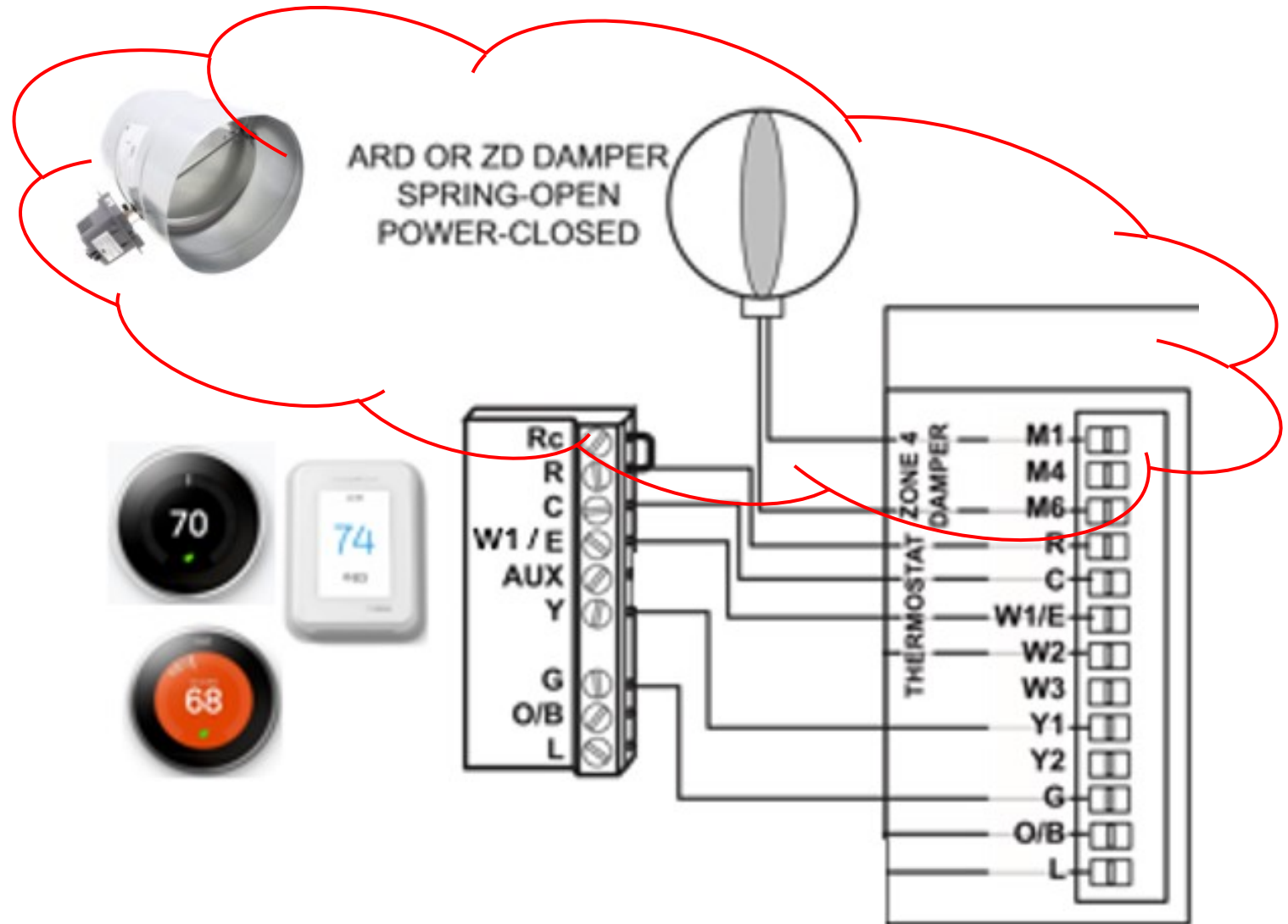
# 5-wire thermostat installation example:



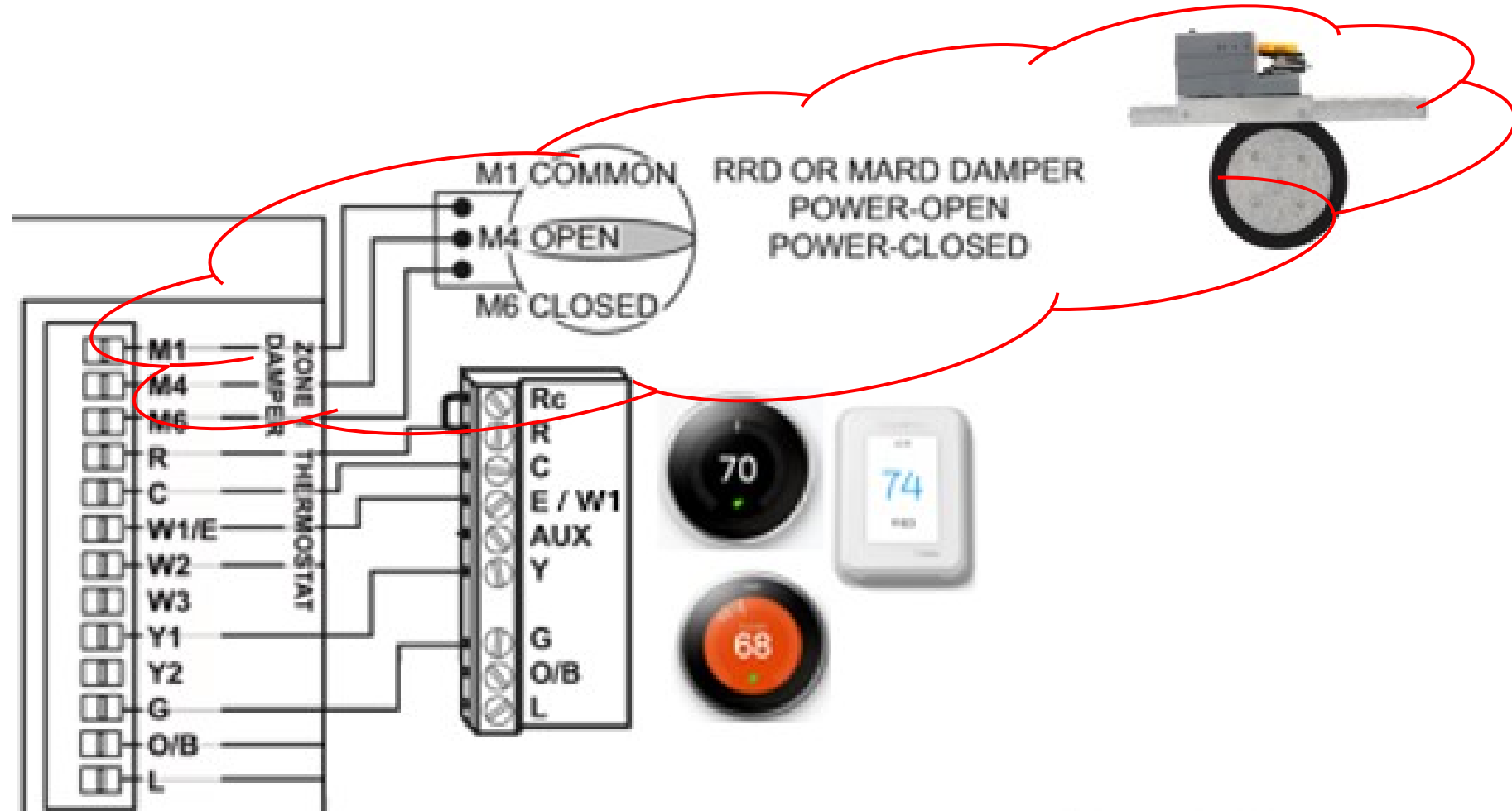
Connect thermostat to zone panel. To connect wire to the panel, strip approximately 1/4 in. of insulation and push wire into terminal. To release wire, press the button on top of the terminal.

**Note:** Install thermostats using instructions provided with the 5-wire thermostat.

## ARD or ZD Series Damper wiring example:



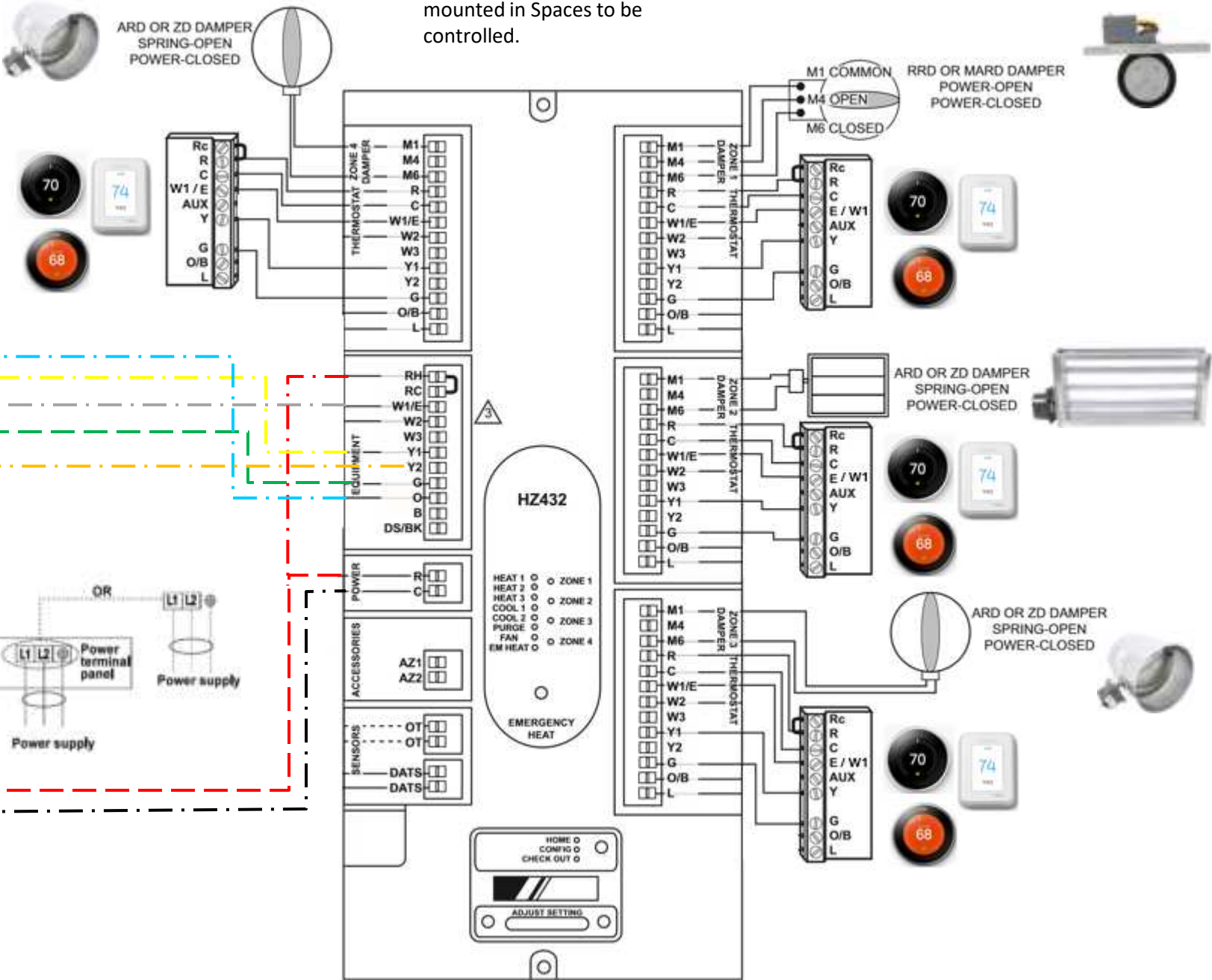
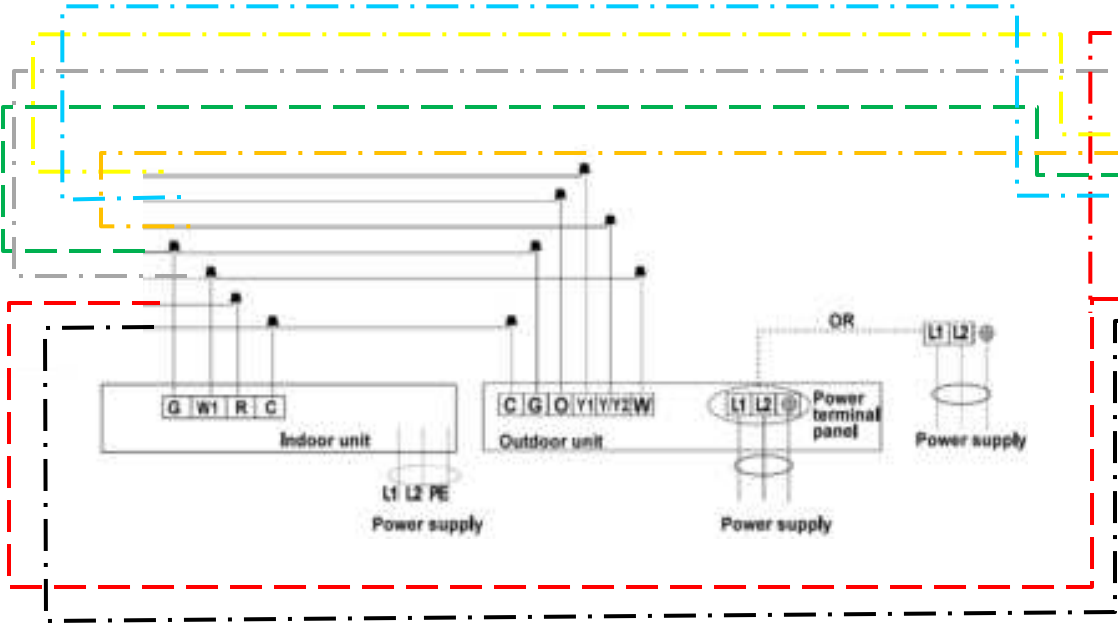
## RRD or MARD Series Dsampler wiring example:



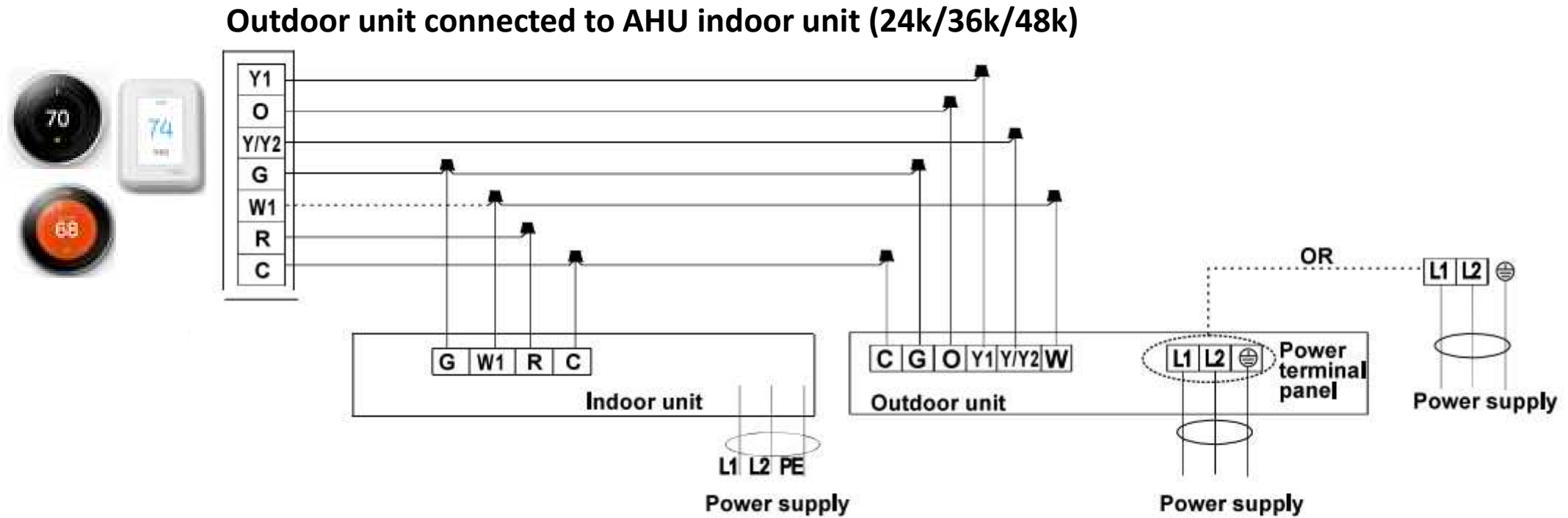
# Zoning System

## example 4-zones:

5-Wire Smart Thermostats  
mounted in Spaces to be  
controlled.



# Outdoor unit connected to AHU indoor unit (24k/36k/48k)



## Note:

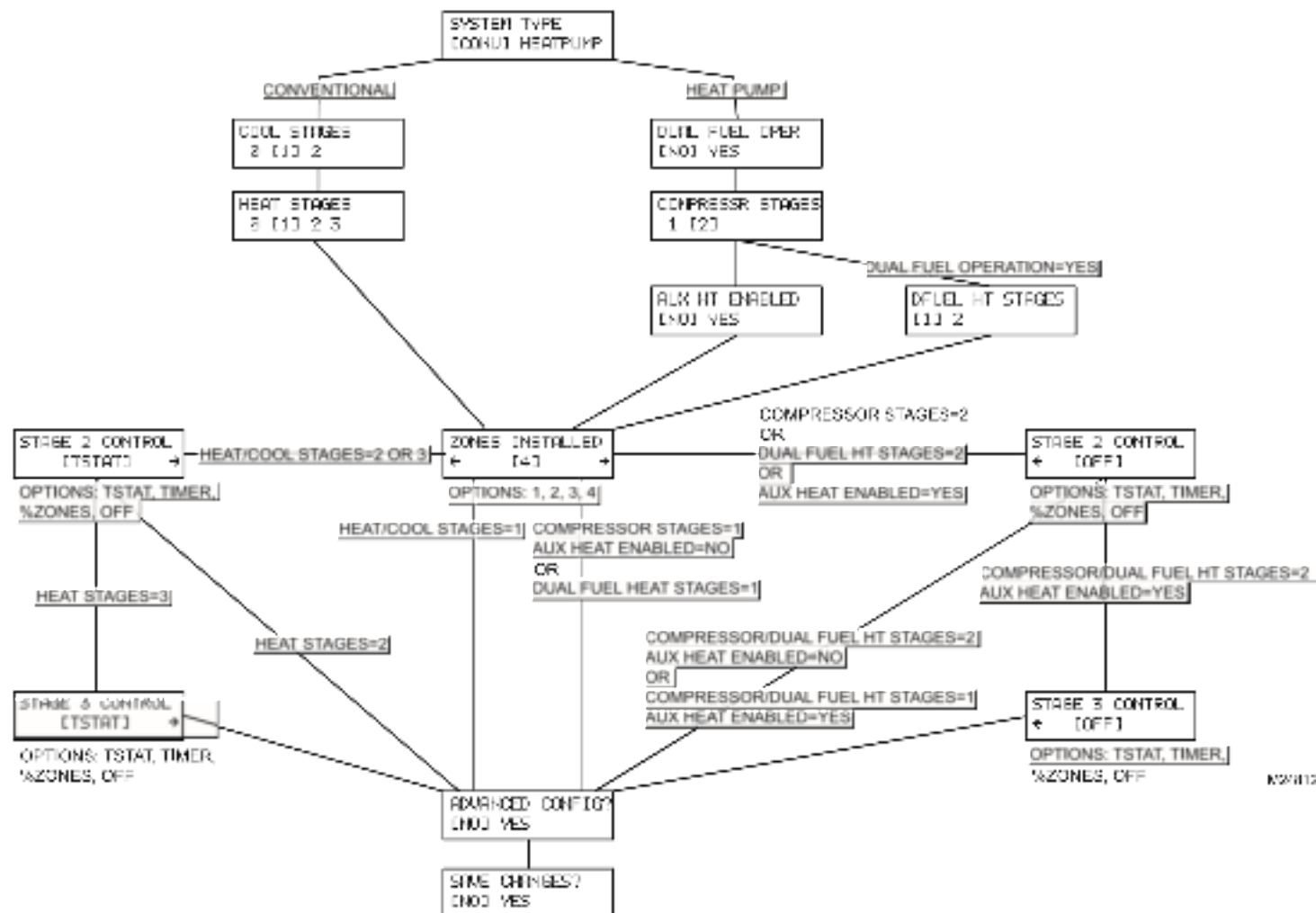
When connecting AHU indoor machines, the indoor unit wiring should be operated according to the indoor unit wiring diagram.

# HZ432 Configuration Setup

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System Type = **Conventional**  
Cool Stages=**1**  
Heat Stages=**1**  
RF Enabled=**No**  
Zones Installed= 1 thru 4 (Select how many zones are needed)  
Advanced Configuration=**Yes**  
Heat Fan Control=**HVAC**  
Purge Time (**2**) 2,3,5,5 minutes  
Fan in Purge=**HVAC**  
Purge Damper=**Unchanged**  
Change over Delay=(**15**) 15,20,30 minutes  
Discharge sensor=**No**  
LCD Contrast=**4** (Adjustable 1 thru 10)  
Save Changes=**Yes**  
Purge override=**(Next =Yes)**  
Normal Mode

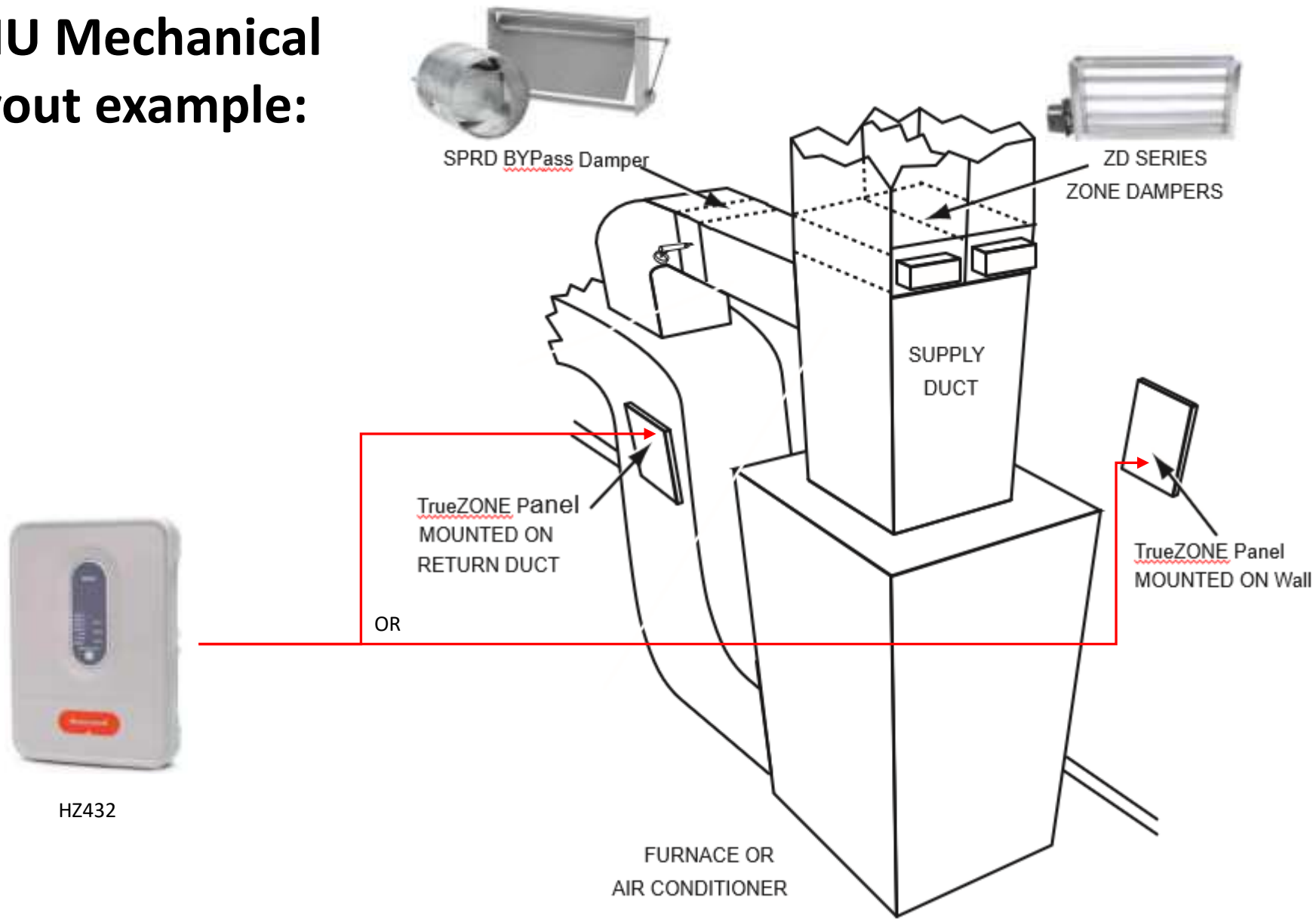


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# Mechanical Layout

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# AHU Mechanical layout example:



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# Parts List

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Parts list:

Equipment		ODU Models	AHU Models	Zone Controller- 4 zones	Zone Controller Expansion- Additional 4 zones	Zone Dampers	Bypass Damper	5-Wire Thermostt	A2L Mitigation System
Guardian (R454B)		UPC24CN23STG1 UPC36CN23STG1 UPC48CN23STG1	JHE18B5AB2SS1 JHE24B5AC2SS1 JHE36B5CD2SS1 JHE48C5CG2SS1						Built in JHE AHU
Honeywell				HZ432 TrueZone Control Panel	Taz-4 Add-A-Zone Control Panel	ARD/ZD series damper RRD/MARD series damper	SPRD series damper Barometric by-pass damper		
5-Wire Smart Thermostat								Compatible with any Conventional / SMART 5-wire thermostat in the market	

# Performance

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# Performance:



Model	Indoor		JHE18B5AB2SS1	JHE24B5AC2SS1	JHE36B5CD2SS1	JHE48B5CG2SS1
	Outdoor		UPC18CN23STG1	UPC24CN23STG1	UPC36CN23STG1	UPC48CN23STG1
Performance	Cooling capacity @ 95°F	BTU/h	18,000	24,000	36,000	48,000
	Heating capacity @ 47°F	BTU/h	25,000	30,000	42,000	55,000
	Cooling capacity range	BTU/h	-	-	-	-
	Heating capacity range	BTU/h	-	-	-	-
	SEER2	Cooling	18	18	18	18
	HSPF (IV)	Heating	9.5	9.5	9.5	9.5
	EER2 for cooling (95°F)	BTU/W	12	11.7	11.7	12
	COP @ 5°F	W/W	1.98	2	1.92	1.92
	Heating capacity @ 17°F (rated)	BTU/W	16,600	20,200	23,200	35,600
	Max. heating capacity @ 5°F	BTU/h	19,500	24,200	36,000	48,000
Power supply	Rated voltage	V/Ph/Hz	208-230V, 60Hz, 1P	208-230V, 60Hz, 1P	208-230V, 60Hz, 1P	208-230V, 60Hz, 1P
Indoor unit	Sound pressure level (high)	dB (A)	-	-	-	-
	Unit dimensions (W X H X D)	In	17-1/2 x 45-5/8 x 20-1/2	17-1/2 x 48-3/8 x 20-1/2	17-1/2 x 48-3/8 x 20-1/2	21 x 60 x 20-1/2
	Net weight	lbs	90	96	97	129
Outdoor unit	Operating range - cooling	°F (°C)	5°F-125°F	5°F-125°F	5°F-125°F	5°F-125°F
	Operating range - heating	°F (°C)	-13°F-75°F	-13°F-75°F	-13°F-75°F	-13°F-75°F
	Sound pressure level (high)	dB (A)	71	71	74	74
	Unit dimensions (W x H x D)	In	35-3/8 x 29-1/2 x 13-3/8	35-3/8 x 29-1/2 x 13-3/8	43-1/4 x 34-1/2 x 17-3/4	38-3/8 x 57-1/2 x 13
	Net weight	lbs	123.4	123.4	185.2	244.7
Piping	Max. total piping length	ft	165	165	164	246
	Max. total piping height	ft	100	100	98	98
	Pre-charge piping length	ft	25	25	25	25
	Refrigerant	-	R-454B	R-454B	R-454B	R-454B
Piping connection	Liquid	In	3/8	3/8	3/8	3/8
	Gas	In	5/8	5/8	5/8	3/4
	Drain	In	5/4	5/4	5/4	5/4

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# FAQ's

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# FAQ's

1. What is the system voltage for the systems?  
For the ODU 208/230 vac supply and IDU they use 115/vac/ 208/230 vac supply.
1. Can you source the supply voltage from the ODU?  
Yes, you can source from the ODU if the IDU has the same input voltage. Need to verify circuit breaker size to accommodate the additional load of the IDU.  
Otherwise, a separate circuit is required to power IDU.
1. Where does the Zone controller get its supply power from?  
From the IDU (AHU). This will power the HZ432 TrueZone panel which will supply the 24vac to the connected 5-wire thermostats, dampers.
1. What is the zoning size of the system?  
The minimum requirement is 2 zones, but with expansion panel can go to 8 zones. The Honeywell HZ432 TrueZone Panel has 4 zones. If more zones are required, add the expansion TAZ-4 Add-A-Zone panel for 4 additional zones.  
**Note:** Engineer / installer must make the load calculation for the system for all the zones. The possibility of all the zones requiring Heat or Cool must be met by the system designed.
1. Is there any setup of the Controls?  
Yes, there are two items to be setup. The HZ432 and the C3STAT01 adapter. See HZ432 Configuration Setup. For additional information, refer to the specific Product documents that come with the units.
1. Who sets up the Bypass damper?  
The SPRD Series Bypass damper is a mechanical damper. A trained professional (air Balancer) should set the damper to the correct required static pressure setting to maintain the required static pressure of the system.
1. Can you Twin the ODU's for more capacity?  
No, they are intended to be 1 to 1 with the ODU / IDU chosen for the required load.
1. Does the system have to be set to heat or Cool mode?  
The HZ432 sets the system mode based on any one of the connected thermostats. The zone that calls for Heat or Cool, puts the system in that mode. Example: Zone 1 call for the zone to be in heating. Zone 1 damper is open, and the ODU is set to heat. The other zones that are not requiring heat, their dampers will close. Providing heat to that one zone. If there is a call from another zone for cooling after it is in heat mode. The HZ432, will wait until the 1<sup>st</sup> zone is satisfied and shuts off, then the system will switch to the zone requiring cooling. If the system does not satisfy the active zone within the Changeover time (adjustable) the ZN432 will switch to the other mode to satisfy those zones. More sequence description is listed in the manual.
1. Does the system communicate with WiFi?  
Yes, you will use the manufacturers Smart Thermostats WiFi app to control via your Smart phone.
1. Can you use any manufacturers damper kit.  
Yes, but you must not exceed 8 va power of the 24vac actuation, Use the preferred Honeywell damper kits.

**Note:** Systems must be installed by qualified technician.

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