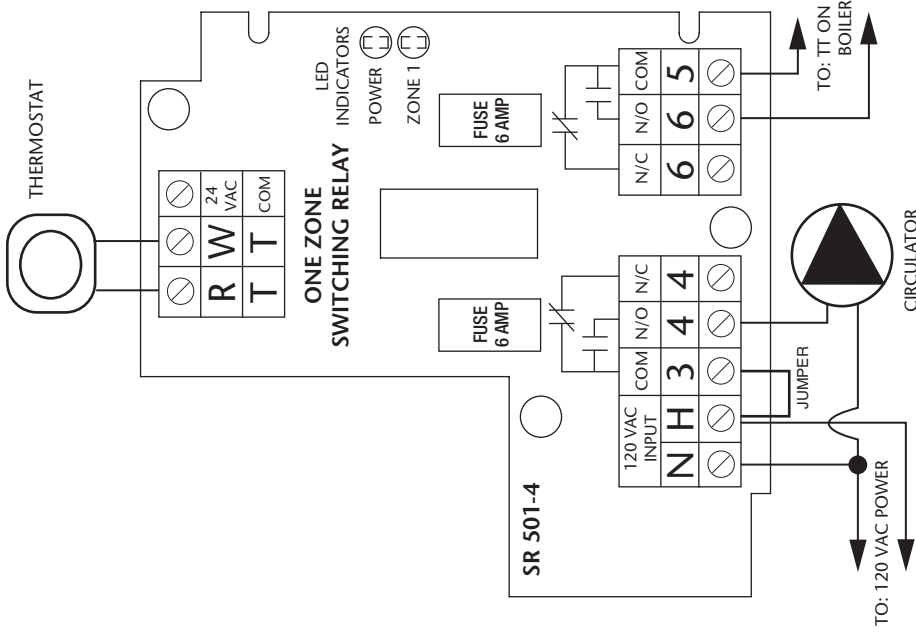
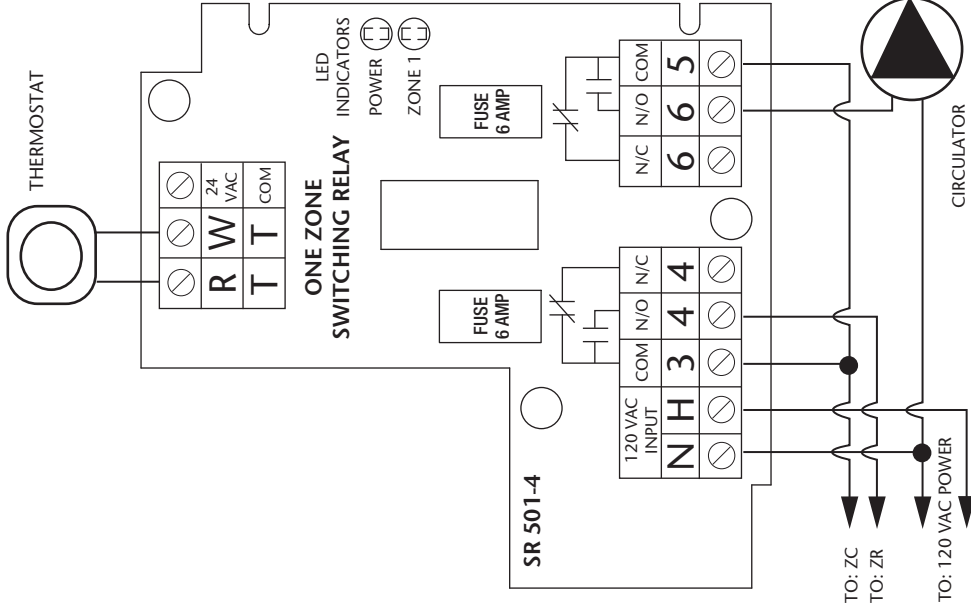


# SR501-4 Switching Relay Wiring

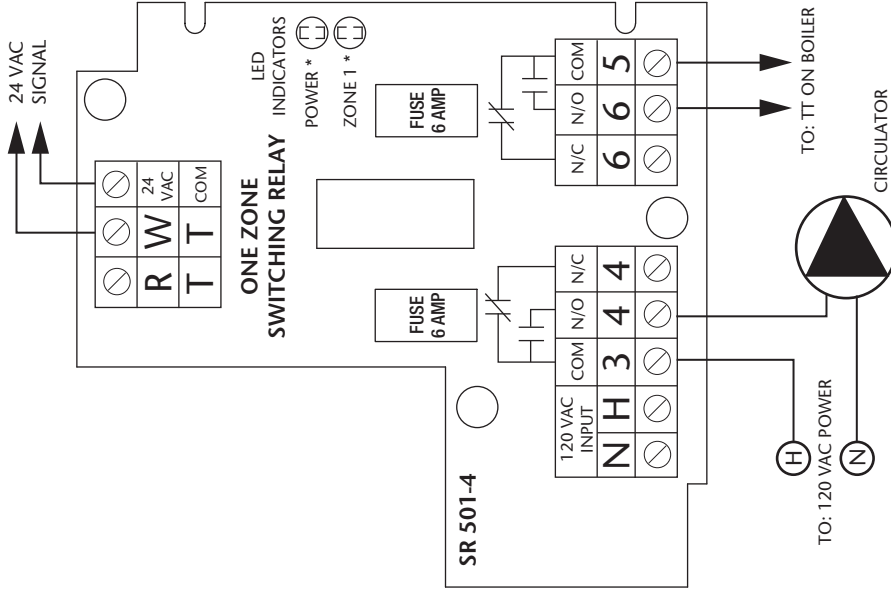
**TYPICAL WIRING  
(COLD START)**



**ALTERNATIVE WIRING  
(TANKLESS COIL)**



**ALTERNATIVE WIRING  
(24 VAC POWERED INPUT SIGNAL)**

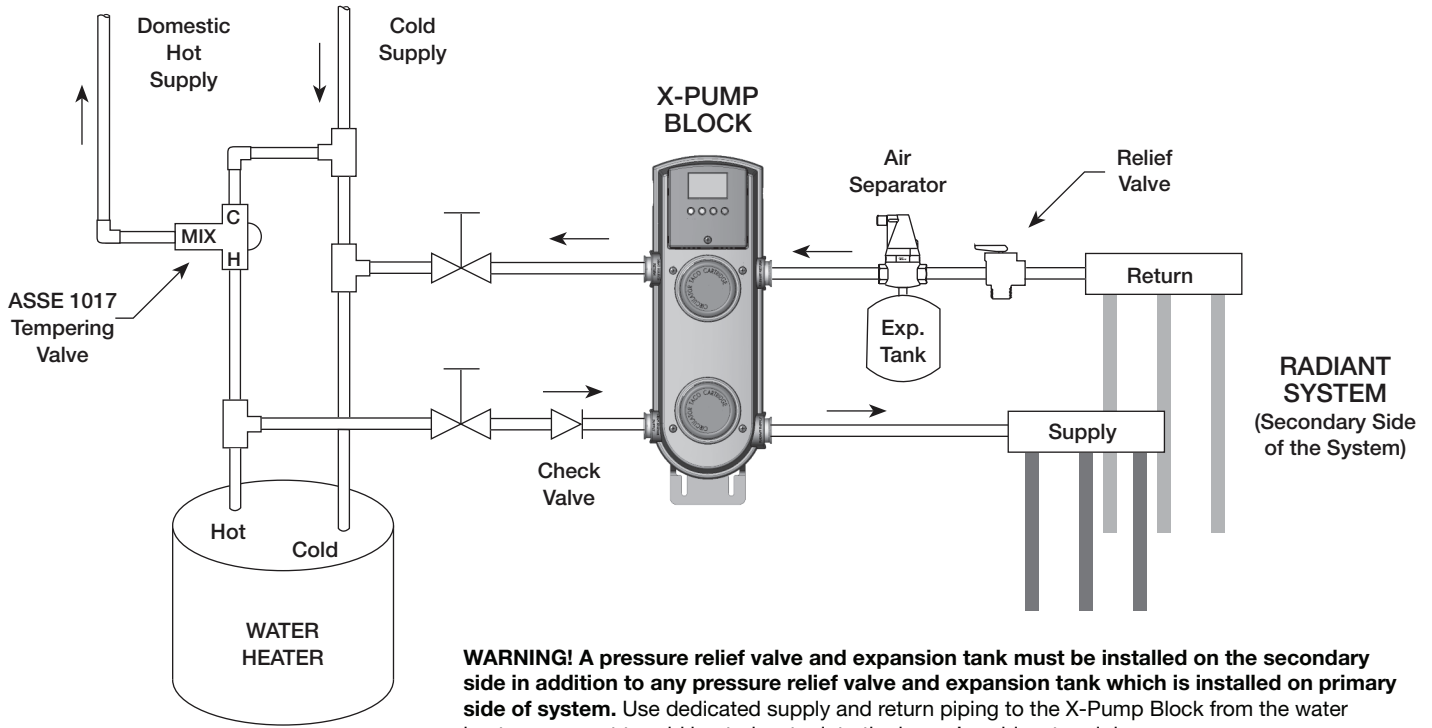


REMOVE JUMPER.  
DO NOT CONNECT POWER  
TO N AND H TERMINALS.

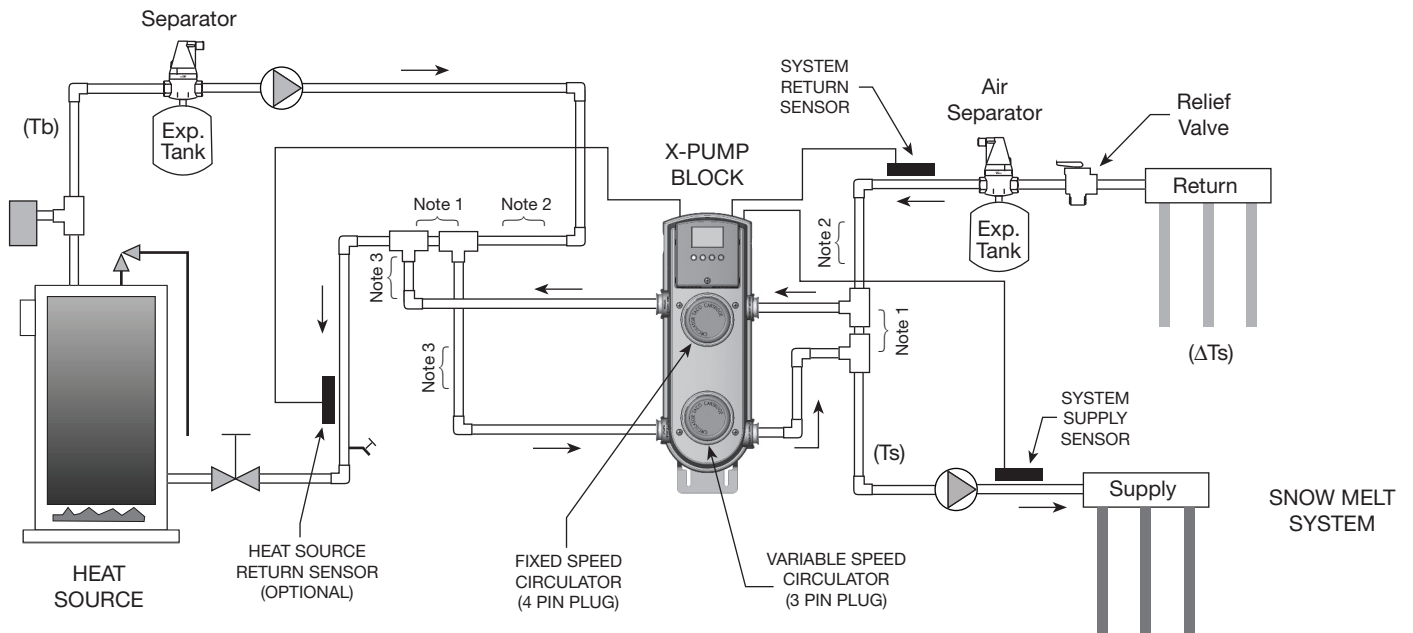
\* T STAT LIGHT WILL GO  
ON AND OFF WITH 24 VAC  
SIGNAL. POWER LIGHT  
WILL ALWAYS BE OFF.

**Note:** When using Alternative Wiring diagram, the boiler operating control's ZC terminal will see the load of the circulator(s).  
**Warning:** When using Alternative Wiring diagram, wiring instructions must be followed so power originates from the boiler aquastat. Failure to follow these wiring instructions may result in a secondary source of power being connected to the boiler that may activate it under certain circumstances, causing injury or death.

## Typical Radiant Floor to Water Heater Installation



## Typical Snow Melt Installation

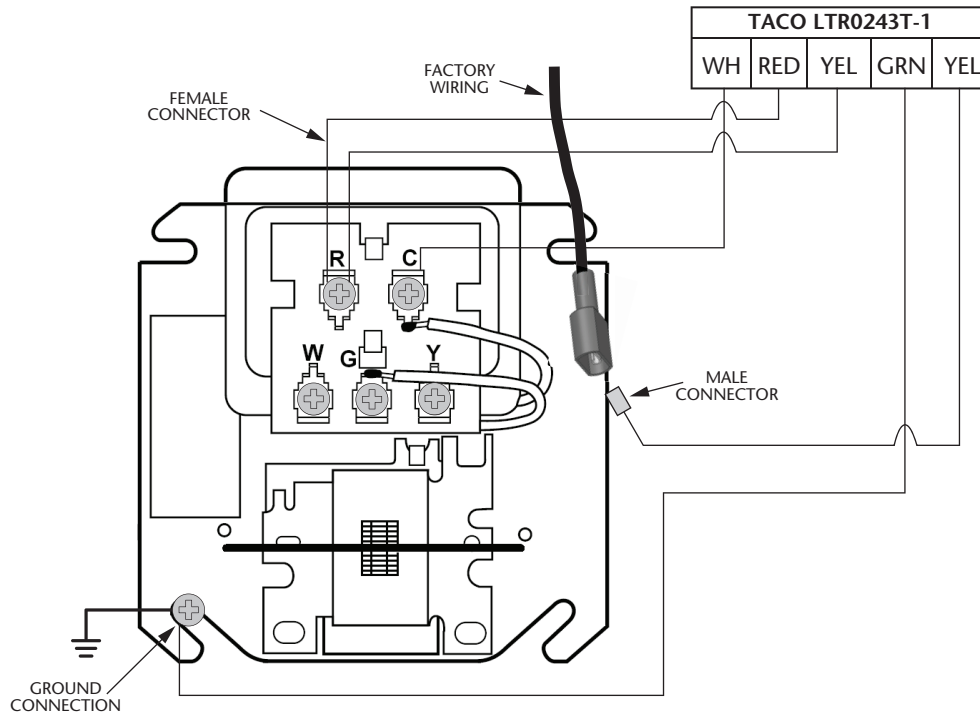


Tb = Boiler Supply Temperature

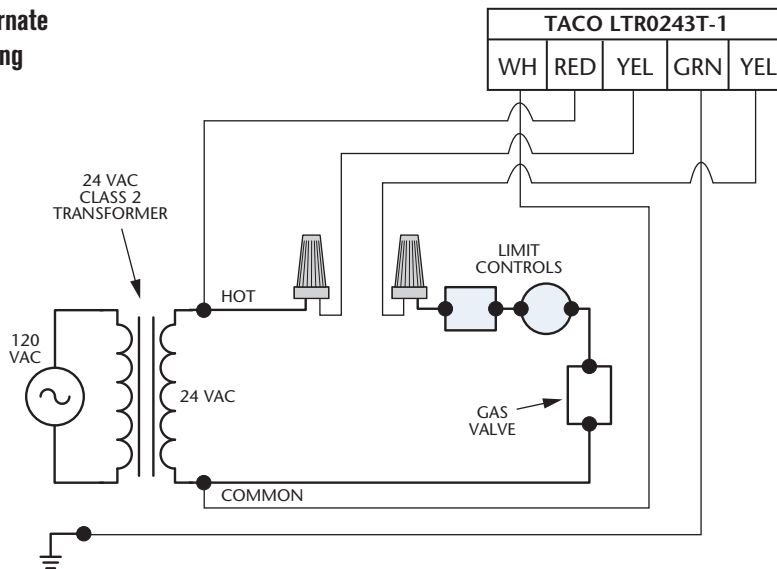
Ts = System Supply Temperature

$\Delta T_s$  = System Temperature Drop  
(typically 20°F for convectors  
and 10°F for radiant floor heating)

# Wiring for Boilers with Honeywell Control Center Model R8285 or Equivalent



## Alternate Wiring





# Instruction Sheet

## SR501-EXP-4 Switching Relay

**Operation:** When the thermostat calls for heat, the circulating pump is energized and the isolated end switch (X and X) will start the boiler.

**Priority Operation:** When the priority dip switch is set to ON and the zone is actuated, all other connected zoning panels will stop operation until the zone is satisfied. When the priority dip switch is set to OFF and the zone is actuated, all other connected zoning panels will operate independently.

**Mode Operation:** When the mode dip switch is set to NORMAL, the end switch relay will be energized if any zone is in operation. When the mode dip switch is set to RESET, the end switch relay will only be energized through the operation of a plug-in reset control or closure of Priority Input.

**Primary Pump Operation:** When the dip switch is set to OFF, the primary circulating pump output will not energize when zone calls for heat. When the dip switch is set to ON, the primary circulating pump output will energize when zone calls for heat.

**Post Purge Operation:** When the dip switch is set to ON, the circulation pump output will stay energized for 2 minutes after its thermostat or aquastat is satisfied, but not operate the boiler.

**Priority Protection Operation:** When the dip switch is set to ON and the zone (priority) on master zone panel calls for heat continuously for more than one hour, then power is returned to the space heating zones allowing all the zones to function independently. Once the zone (priority) on master zone panel is satisfied, the control's auto-reset is activated and the zone is again allowed to have priority for up to one hour.

**Pump Exercise Operation:** When the dip switch is set to ON, the solid state timer cycles all the circulating pumps that are attached to the Expandable Switching Relay at the selected time interval. The time interval can be set for the pumps to run for either 30 seconds every 2 weeks or for 4 minutes every 24 hours.

**End Switch:** The switch closes when the thermostat calls for heat and the mode switch is set to NORMAL. The end switch also closes when the mode switch is set to RESET and a PC Series boiler reset power control is calling for heat.

**Expansion Connections:** Set the expansion switch to MASTER on the switching relay that has the designated priority zone or is utilizing the PC Series plug-in option. Set all other daisy chained controls to SLAVE. Using thermostat wire (18-22 gauge) connect between terminals A, B, C on the master control to the corresponding A, B, C on the SLAVE control(s). Controls may be daisy chained up to 20 zoning panels using any combination of -EXP controls (120 zones if all are 6 zone panels).

### Thermostat Input (24 vac):

- R** Hot side of transformer. Connect to **R** on thermostat.
- W** Switched **R** signal from thermostat. Connect to **W** on thermostat.
- C** Common side of transformer. Connect to **COM** on thermostat (optional).

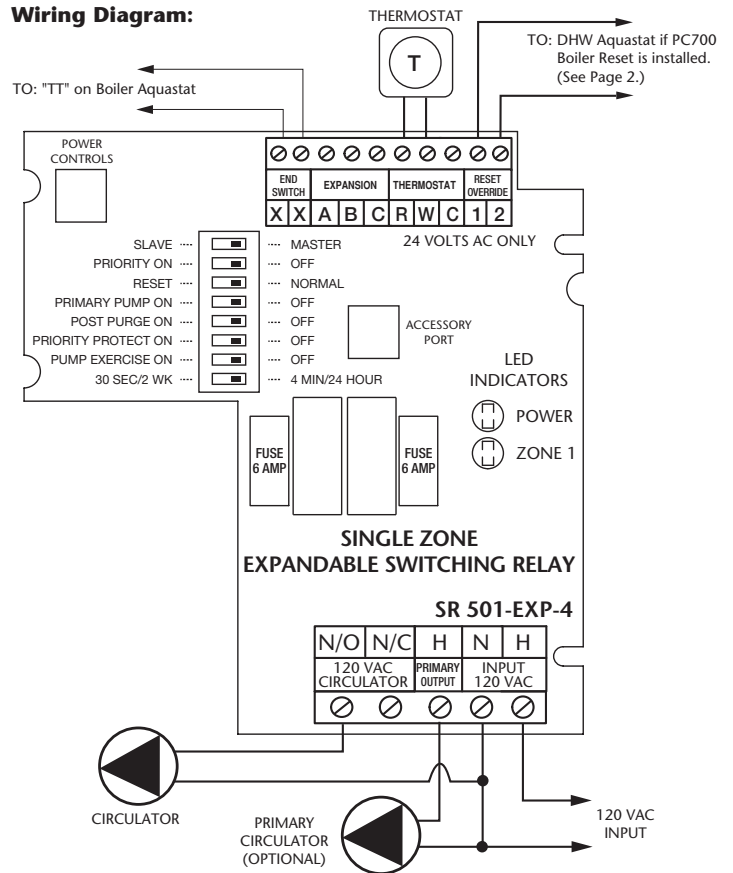
### 120 VAC Connections (N is Neutral, H is Hot):

- Power Input** Connect 120 Volt AC power.
- Primary** Primary Pump (optional)
- N/O Zone** Circulator Zone
- N/C Zone** Normally closed terminal for the Circulator Zone. Will deactivate on a thermostat call.
- N** Connect to pump neutral leads.

### Features:

- Front External Indicator Lights
- Ideal for Retrofitting
- Primary Circulator Output
- Simplified Wiring
- Add-On Power Controls
- Sealed Relays
- Compact Design
- Fuse Protected
- 100% Factory Tested
- Isolated End Switch
- UL Approved
- Expandable to 20 Zoning Panels (120 zones if all are 6 zone panels)
- Contractor Friendly PC Board Layout
- Universal Thermostat Compatibility
- 24 volt Power Input or Output Terminal
- Extended 3 Year Warranty
- Made in the USA

### Wiring Diagram:



### Dip Switch Settings:

- SLAVE —  — MASTER
- ZONE PRIORITY ON —  — OFF
- RESET —  — NORMAL
- PRIMARY PUMP FUNCTION ON —  — OFF
- POST PURGE ON —  — OFF
- PRIORITY PROTECTION ON —  — OFF
- PUMP EXERCISE ON —  — OFF
- 30 SEC/2 WK —  — 4 MIN/24 HOUR

For more wiring diagrams, visit [www.taco-hvac.com](http://www.taco-hvac.com).

**External Diagnostics:** Externally visible lights show full functionality of the switching relay. The green light should always be on, indicating that power is connected. When the thermostat calls for heat, both the appropriate circulator and red indicating light are energized.

### Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	INPUT VOLTAGE	MAXIMUM COMBINED LOAD	WIDTH	HEIGHT	DEPTH
SR501-EXP-4	1	120/60/1 VAC	12 amps	4 <sup>7</sup> / <sub>8</sub> "	6 <sup>7</sup> / <sub>8</sub> "	2 <sup>3</sup> / <sub>8</sub> "

All circulator relay connections, including ZC/ZR, are rated 1/3 hp (6 FLA, 36 LRA) at 120 VAC. The end switch connection is rated 24 VAC, 1 amp. The thermostat connection supplies a 24 VAC class 2 output.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**WARNING:** Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only. 120 VAC wiring must have a minimum temperature rating of 75°C. Failure to follow this instruction can result in personal injury or death and/or property damage. 12-18 gauge wire recommended for 120 VAC connections, 14-22 gauge wire for thermostat connections, and 14-22 gauge wire for 24 VAC source connections.

**Do it Once. Do it Right.®**

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Visit our web site at: <http://www.taco-hvac.com>

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# TACO Zone Controls Cross-Reference (Continued)

	TACO	ARGO	ERIE	HONEYWELL
<b>ADD-ON POWER CONTROLS</b>				
Boiler Reset Control 2-Stage Boiler Reset Control Variable Speed Pump Injection Mixing Control	PC700 PC702 PC705	DPM-2	BB1200 BB3000	AQ25110B AQ25400B
<b>FAN CONTROLS</b>				
1 Zone Hydro Air Fan Control with Time Delays (1 or 2 Speed)	H AFC201	ARH-1, ARH-2, ARH-3	WA300	

**NOTES:**

1. Does not have both normally open and normally closed contacts.
2. Has only one set of normally open contacts (SPST).
3. Does not have optional priority.
4. Can be expanded to five and six zones with the addition of EXP10 relays.
5. Argo ARM units are expandable to 10 zones using special controls (ARM-1, ARM-4) with a phone jack.  
TACO switching relays can be expanded up to 120 zones using any combination of -EXP models with no special connections.
6. Includes only one data port for adding data port modules.
7. All TACO zone valve controls include an extra set of dry contacts (N/O, Common, N/C).
8. VL500 is only 5 zones, 4 normal and 1 priority.
9. Use with Honeywell AQ 1000 thermostats.