

TACO ZONE CONTROLS WIRING GUIDE

	Pages
Switching Relays – Single Zone Wiring	2
Switching Relays – Oil Boiler Wiring Safety Notice	3 – 4
Switching Relays – <u>NON</u> EXP Connected Together with Priority	5 – 11
Switching Relays – EXP Connected Together with Priority	12 – 14
Switching Relays – Multiple Indirect Hot Water Heaters	15 – 16
Switching Relays – EXP Connected To Reset Controls (PC700, 702 & 705)	17 – 28
Zone Valve Controls – <u>NON</u> EXP Connected Together with Priority	29 – 34
Zone Valve Controls – EXP Connected Together with Priority	35 – 38
Zone Valve Controls – Connected To Reset Controls (PC700, 702 & 705)	39 – 46
Hydro Air Fan Controls (HAFC 101 & 201)	47 – 51
Specialty Thermostat and Zone Valve Wiring	52 – 56
Radiant Mixing Block	57 – 58
X-Pump Block	59 – 61
iSeries Mixing Valves	62 – 63
Low Water Cutoffs and Electric Water Feeders	64 – 79
Aquastat Wiring	80 – 86
Instruction Sheets	87 – 97
Standard Terms and Definitions	98
Cross Reference	99 – 100

**Do it once.
Do it right.** 

TACO Zone Control Product Information

Switching Relays

Product No.

SR501
SR501-845RP

SR502
SR503
SR504
SR506

Description

1 Zone Switching Relay
1 Zone Switching Relay Replacement PC Board for Honeywell R845, RA89A, RA832 or Comparable Relay
2 Zone Switching Relay with Priority
3 Zone Switching Relay with Priority
4 Zone Switching Relay with Priority
6 Zone Switching Relay with Priority

Switching Relays with PowerPort Options and Expandable to 20 Zones

Product No.

SR501-EXP
SR503-EXP
SR504-EXP
SR506-EXP

Description

1 Zone Switching Relay
3 Zone Switching Relay with Priority and 3 PowerPorts
4 Zone Switching Relay with Priority and 3 PowerPorts
6 Zone Switching Relay with Priority and 3 PowerPorts

Zone Valve Controls

Product No.

ZVC403
ZVC404
ZVC405
ZVC406

Description

3 Zone Valve Control
4 Zone Valve Control with Priority
5 Zone Valve Control
6 Zone Valve Control with Priority

Zone Valve Controls with PowerPort Options and Expandable to 20 Zones

Product No.

ZVC404-EXP
ZVC406-EXP

Description

4 Zone Valve Control with Priority and 2 PowerPorts
6 Zone Valve Control with Priority and 2 PowerPorts

Plug-In PowerPort Cards *(For use with all -EXP controls)*

Product No.

PC600
PC605
PC610

Description

Post Purge Timer Plug-In Card
Priority Protection Plug-In Card
Universal Timer/Pump Exercise Plug-In Card

Add-On Power Controls *(For use with all -EXP controls)*

Product No.

PC700
PC702
PC705

Description

Boiler Reset Control
2-Stage Boiler Reset Control
Variable Speed Pump Injection Mixing Control

Fan Controls

Product No.

HAFC101
HAFC201

Description

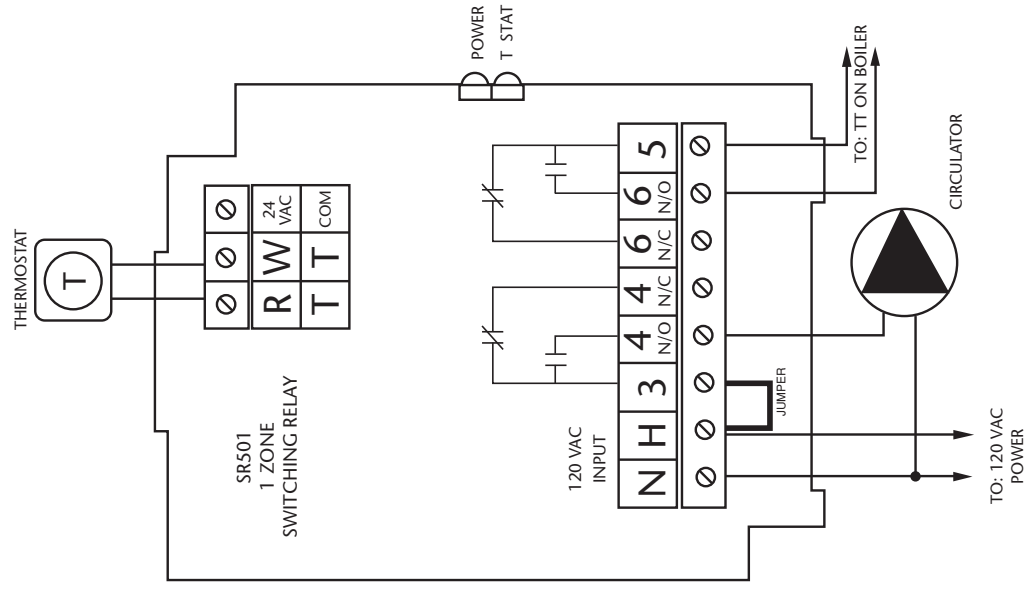
Hydro Air Fan Control
Hydro Air Fan Control with Optional Time Delays

Do it once.
Do it right.

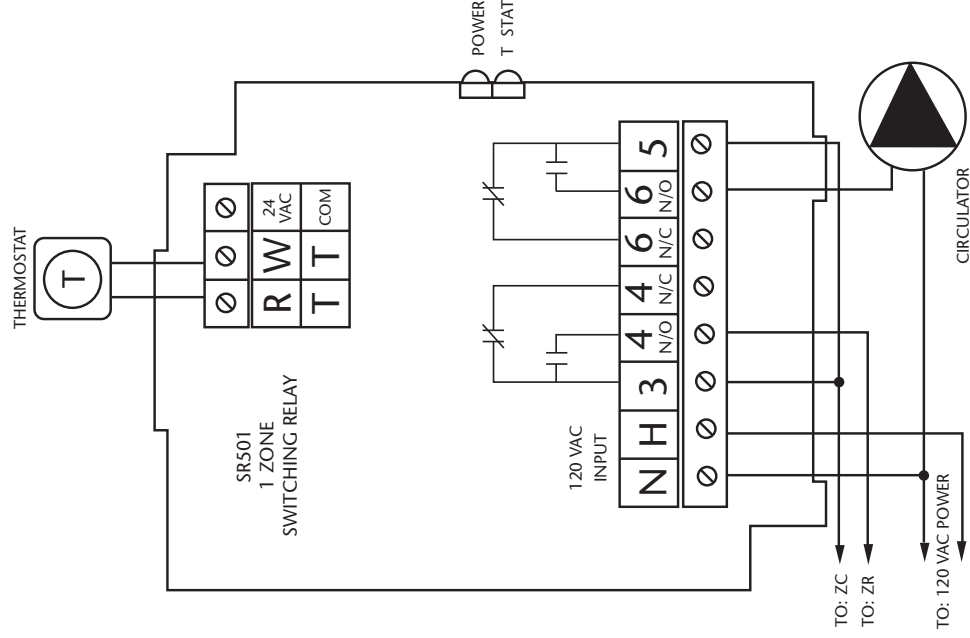


SR501 Switching Relay Wiring

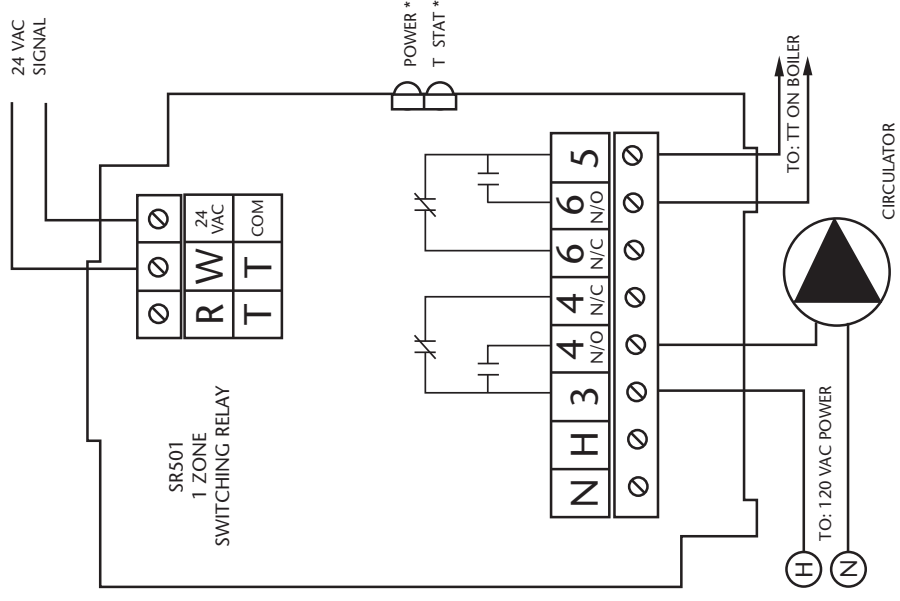
**TYPICAL WIRING
(COLD START)**



**ALTERNATIVE WIRING
(TANKLESS COIL)**



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



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.

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.

SAFETY NOTICE

TWO SEPARATE sources of power may be connected to an oil boiler's aquastat control.

Service Technicians:

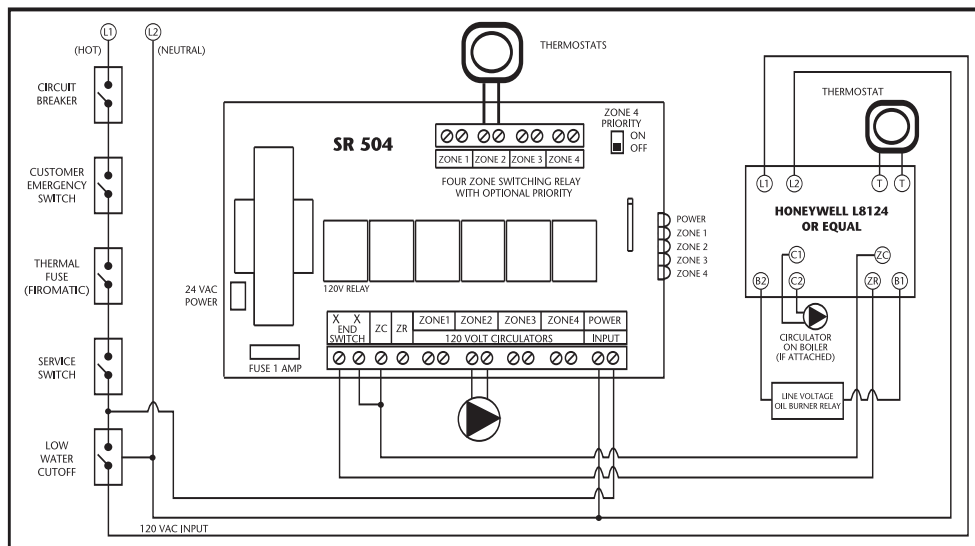
Be alert to potential hazard when using any brand or any style switching relay control in conjunction with an oil fired boiler. All power to the boiler may not be routed through the service switch.

Before servicing an oil fired boiler make sure the service switch is turned off. Then confirm that a secondary source of power does not exist to the boiler aquastat control. Failure to check could result in the boiler being activated when a zone calls, resulting in serious injury or death.

How to check for two power sources:

1. Turn off the service switch.
2. Is the switching relay's power light ON?
No = no secondary source of power connected to the boiler
Yes = a secondary source may be connected, see step 3
3. Is the ZR contact of the switching relay connected directly to the ZR contact of the oil boiler's aquastat control (does not go through the service switch)?
NO = no secondary source of power connected
Yes = a secondary source is connected, see step 4
4. Re-wire the system in accordance to the diagram below. Failure to fix the problem could result in the boiler being activated when a zone calls, resulting in serious injury or death.

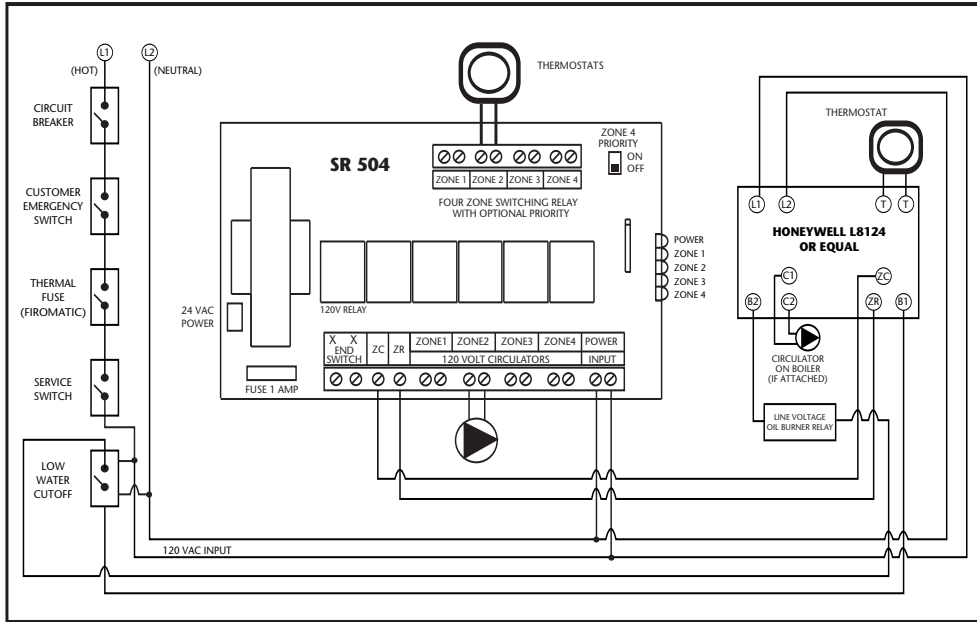
How to correct the wiring:



NOTE: No tankless coil priority.

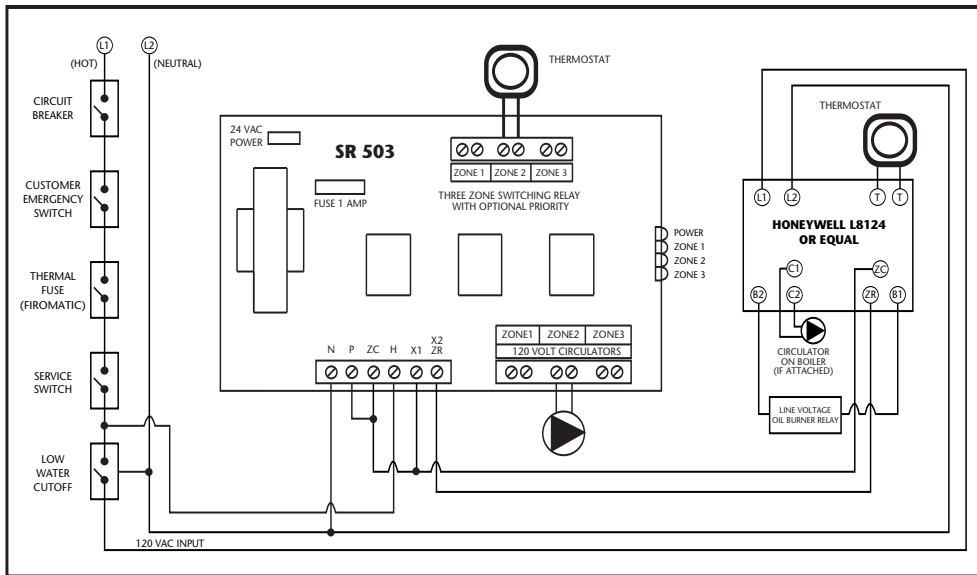
SAFETY NOTICE (cont.)

How to correct the wiring:



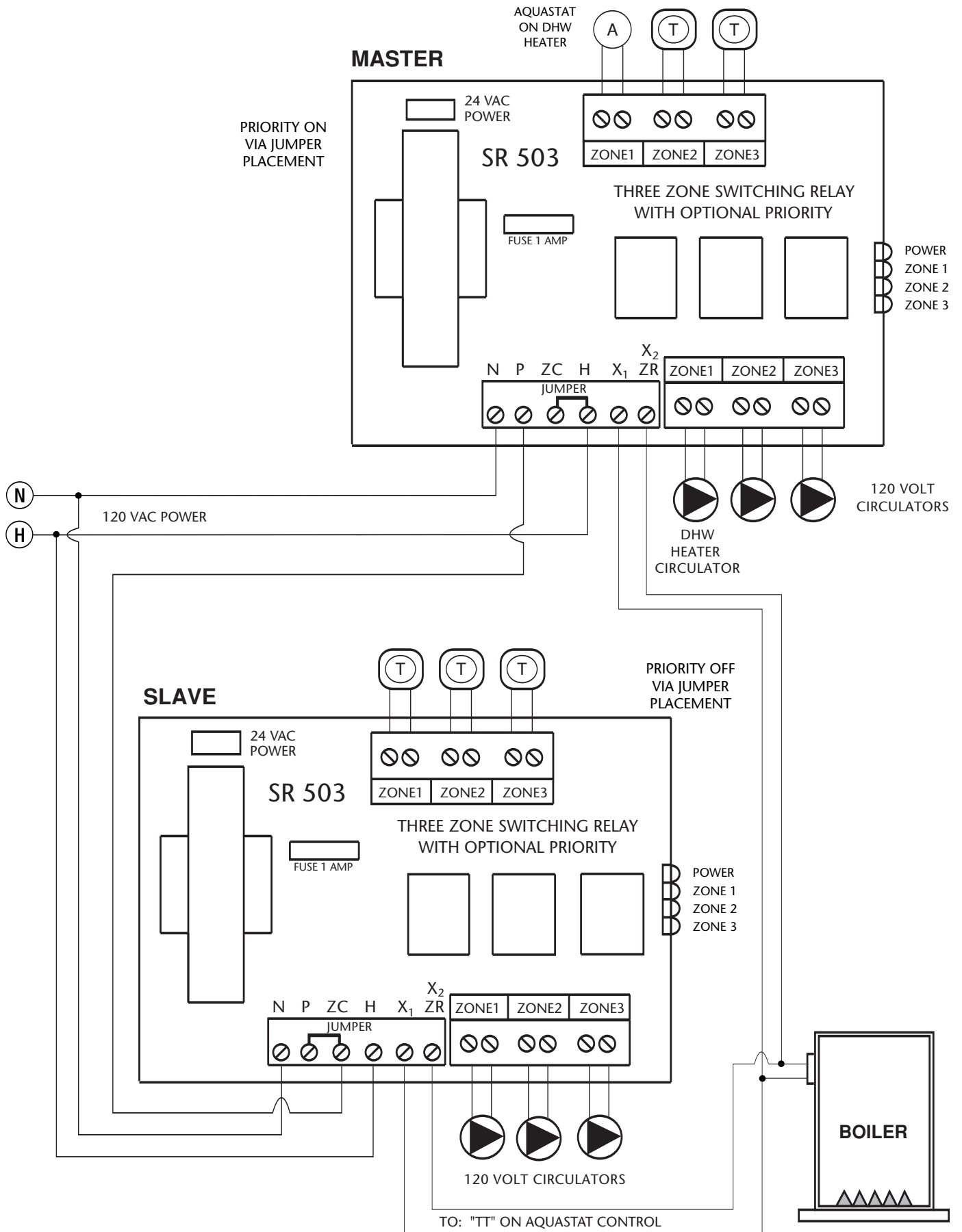
NOTE: Tankless coil has priority.

How to correct the wiring:

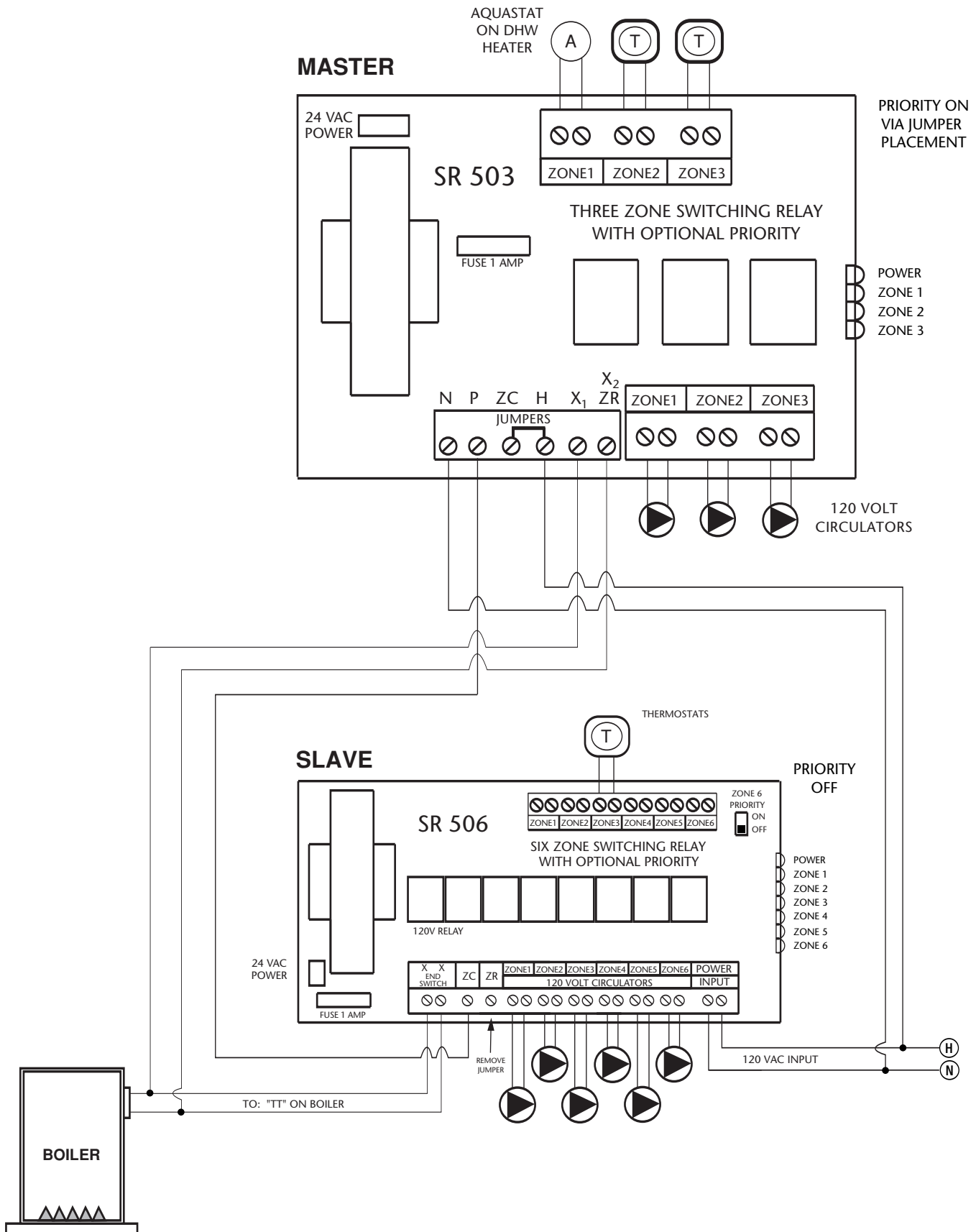


NOTE: The boiler operating control's ZC terminal will see the load of the circulator(s).

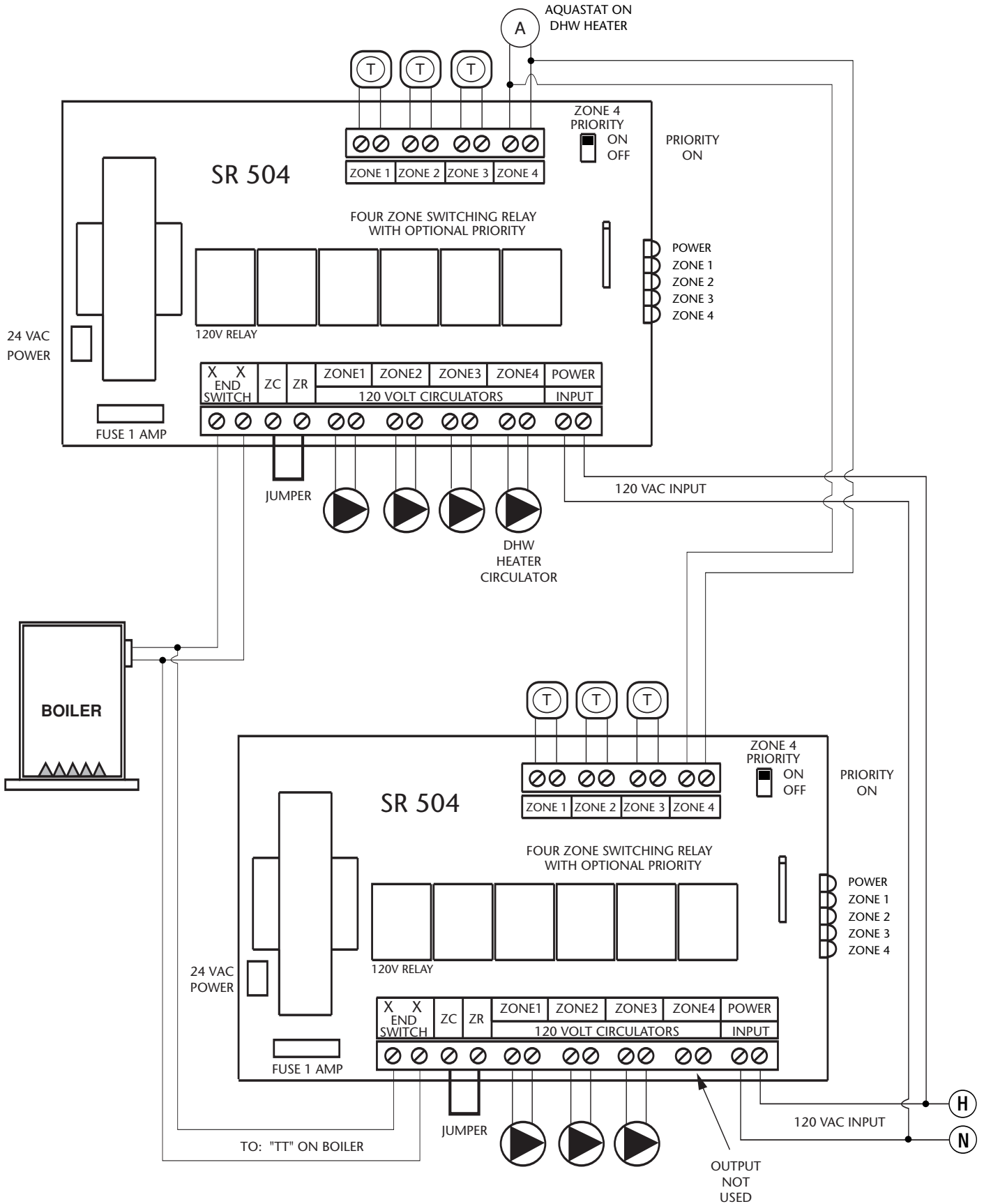
SR502/503 Switching Relay Controlling Another SR502/503 Switching Relay



SR502/503 Switching Relay Controlling Another SR504/506 Switching Relay

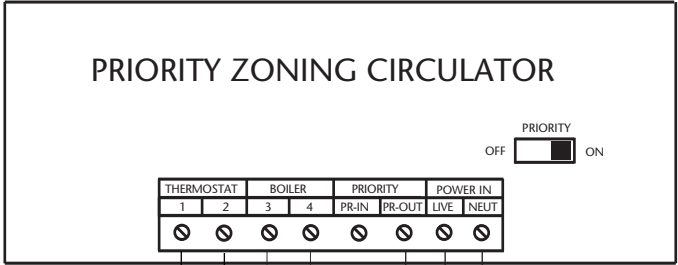


Two SR504/506 Switching Relays Connected Together

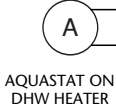


Priority Zoning Circulator Controlling SR504/506 Switching Relay

MASTER



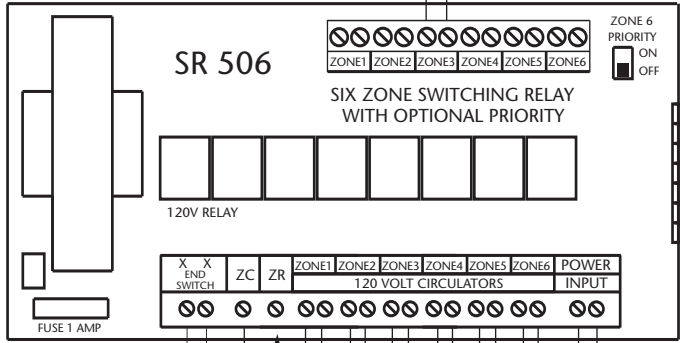
PRIORITY ON



AQUASTAT ON DHW HEATER

120 VAC INPUT

SLAVE



PRIORITY OFF

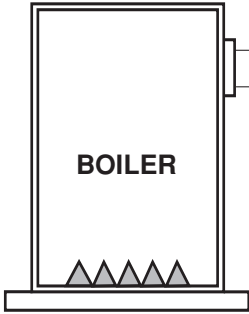
POWER ZONE 1 ZONE 2 ZONE 3 ZONE 4 ZONE 5 ZONE 6

24 VAC POWER

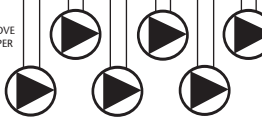
TO: "TT" ON BOILER

REMOVE JUMPER

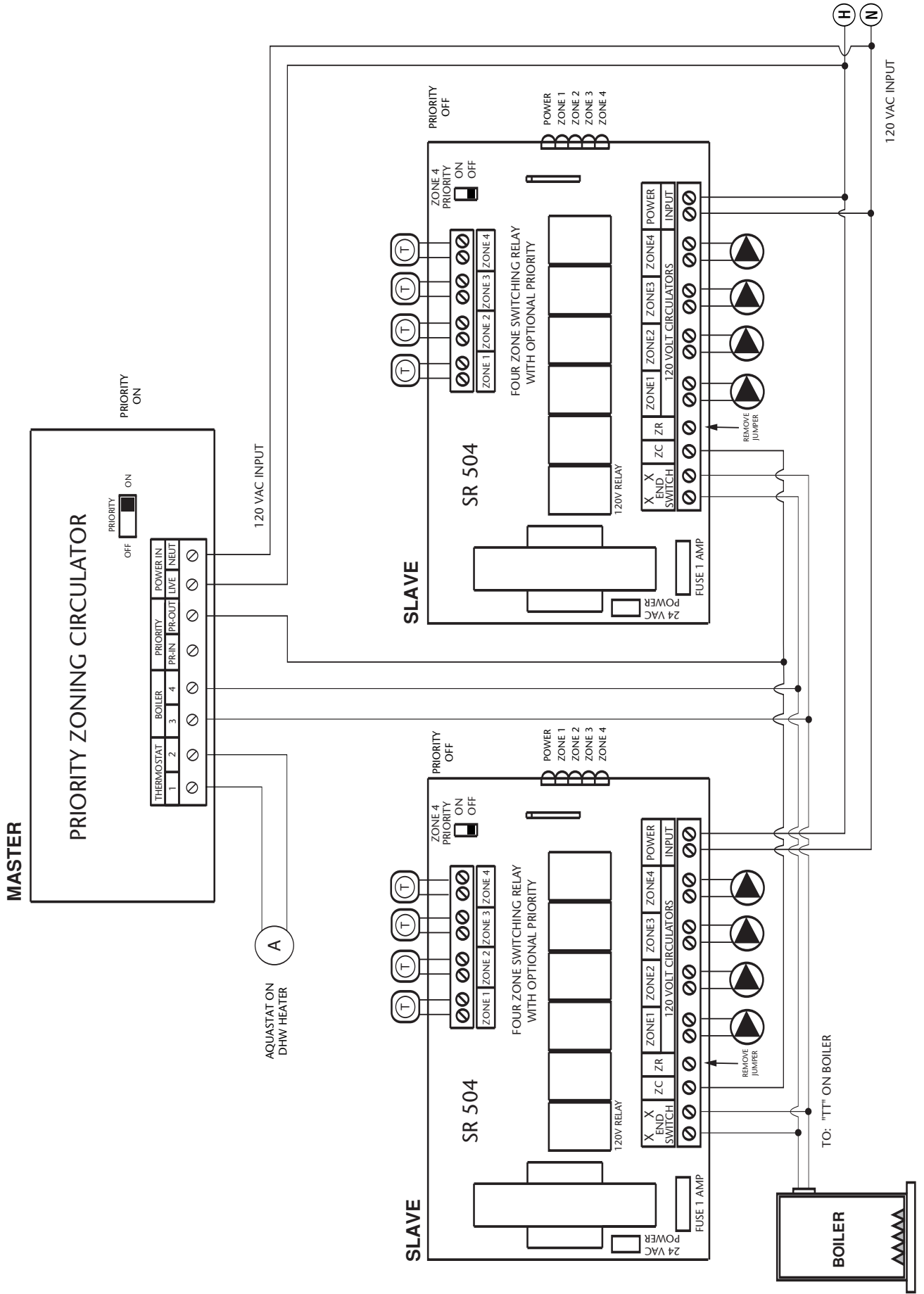
120 VAC INPUT



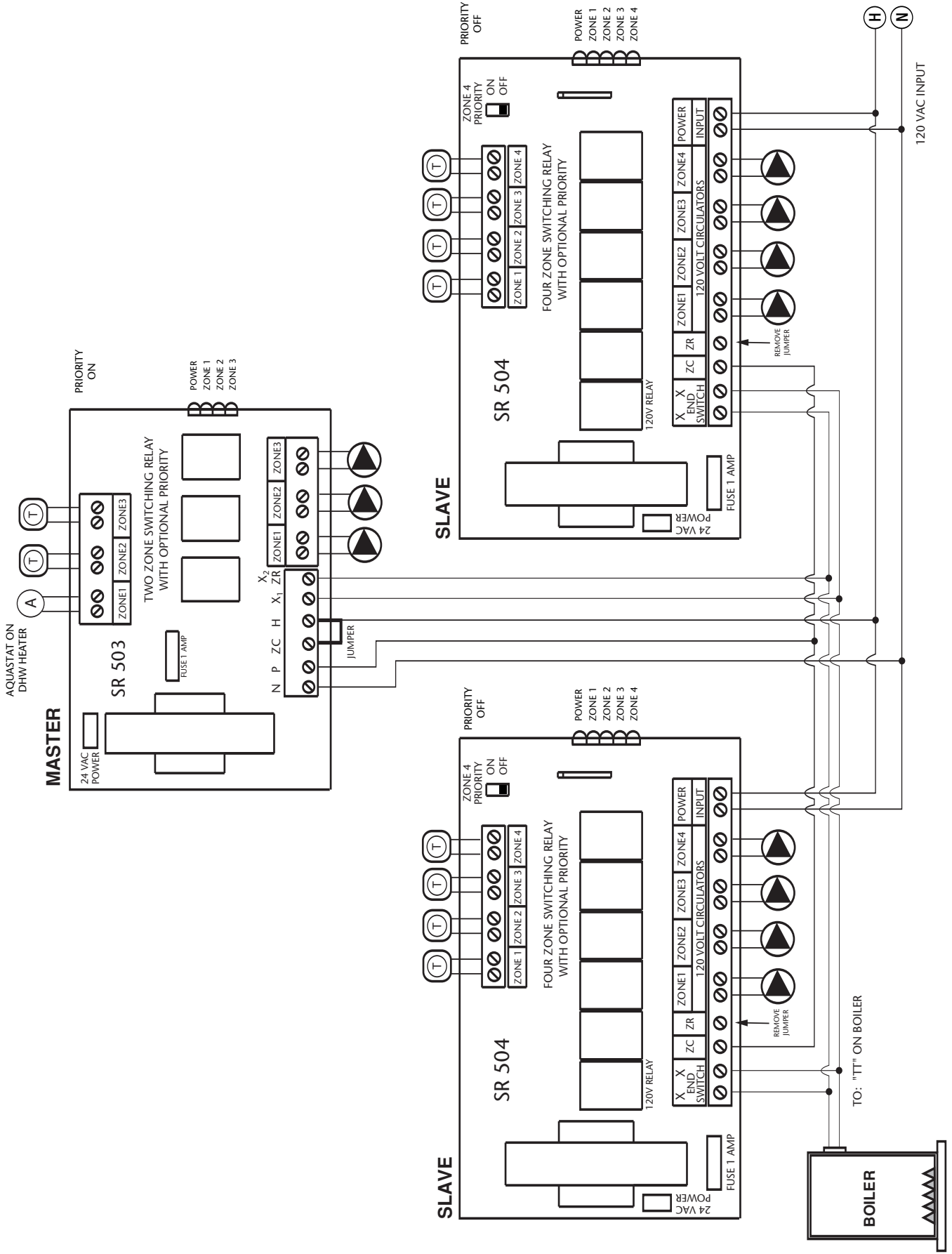
BOILER



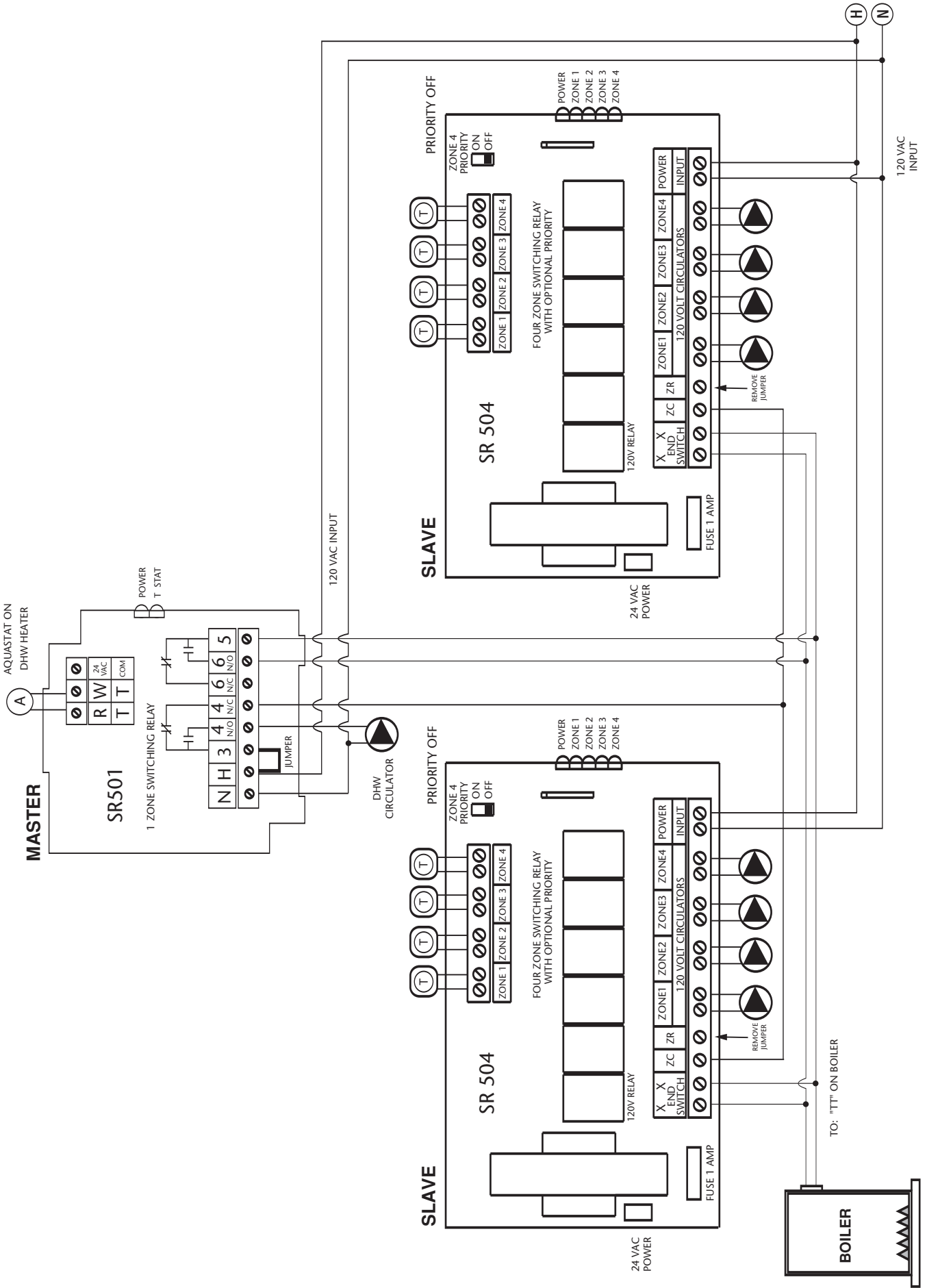
Priority Zoning Circulator Controlling 2 SR504/506 Switching Relays



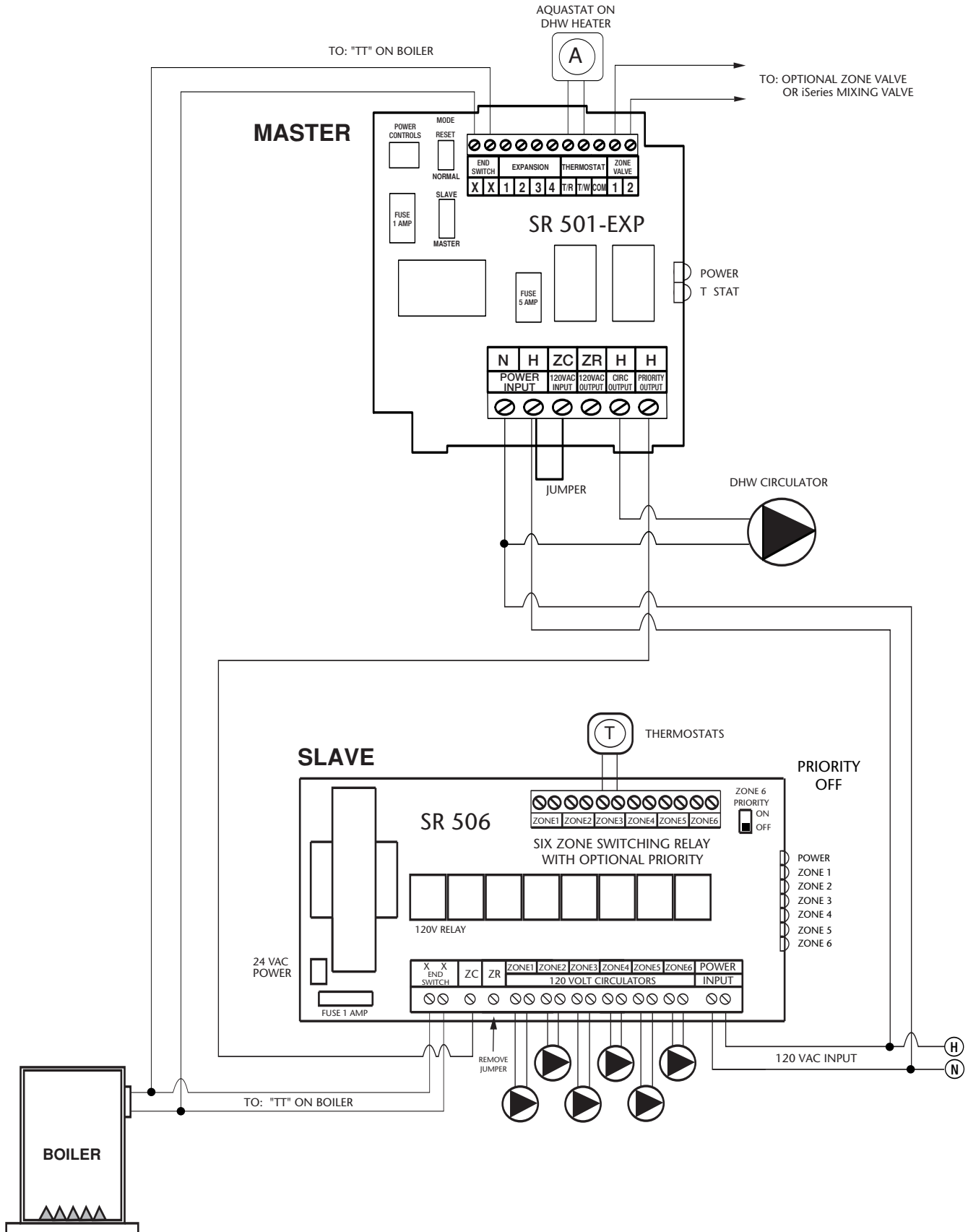
SR502/503 Switching Relay Controlling 2 SR504/506 Switching Relays



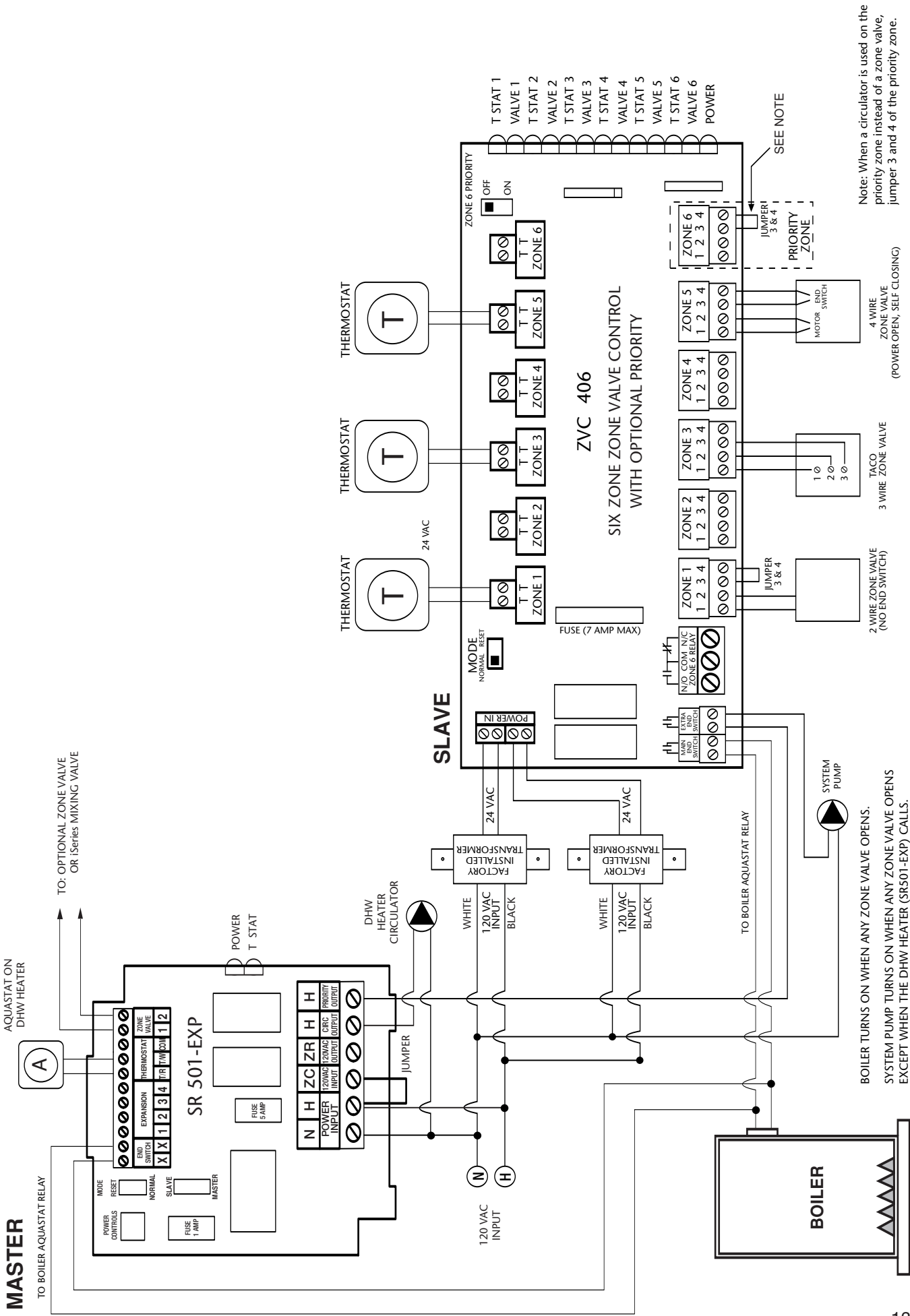
SR501 Switching Relay Controlling 2 SR504/506 Switching Relays



SR501-EXP Switching Relay Controlling Another SR504/506 Switching Relay



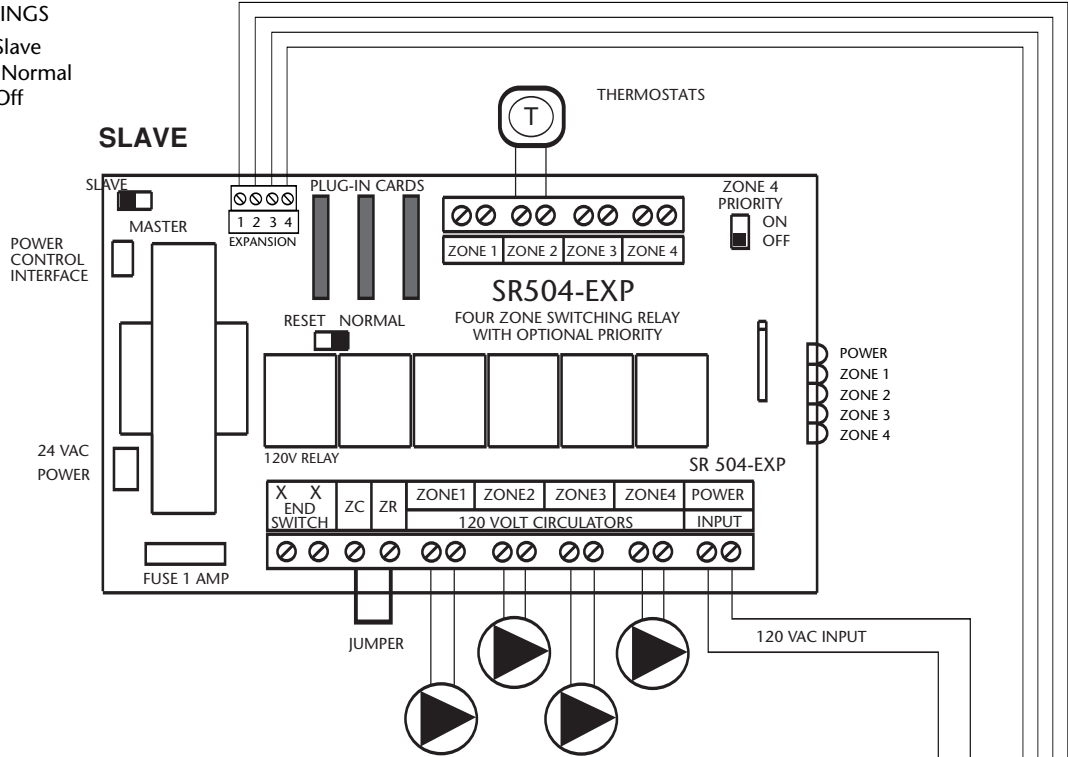
SR501-EXP Switching Relay Controlling a ZVC404/406 Zone Valve Control



2 Expandable Switching Relays Connected Together

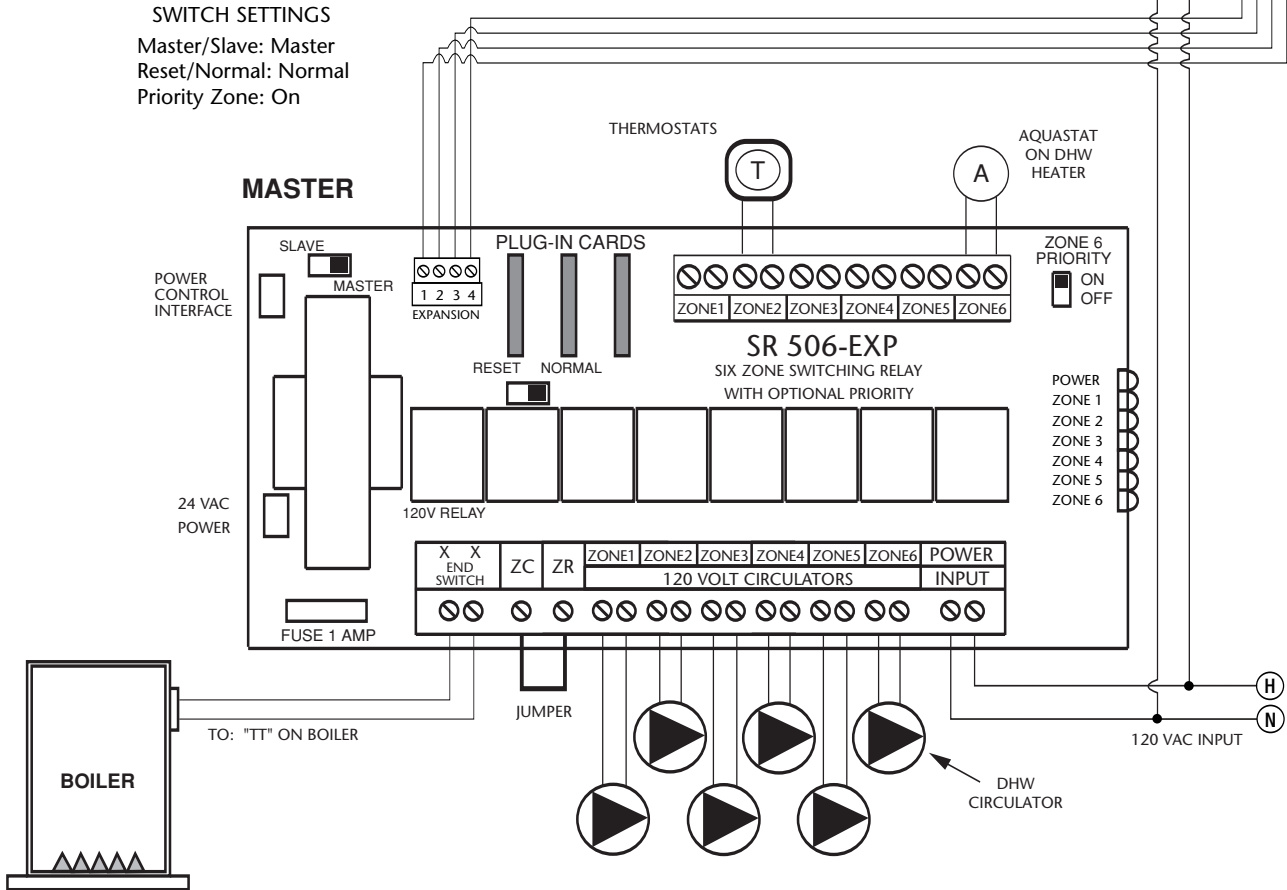
SWITCH SETTINGS

Master/Slave: Slave
 Reset/Normal: Normal
 Priority Zone: Off

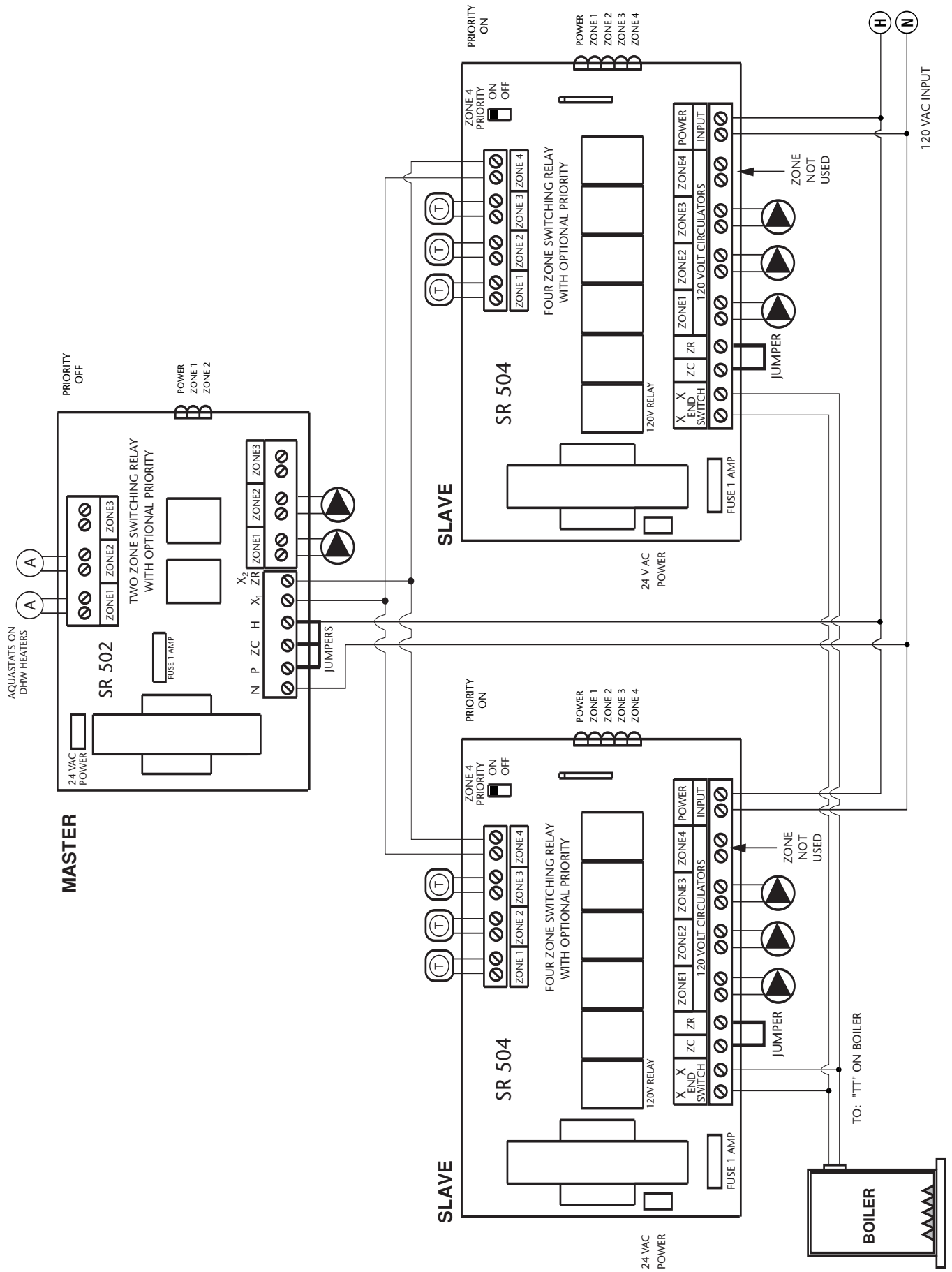


SWITCH SETTINGS

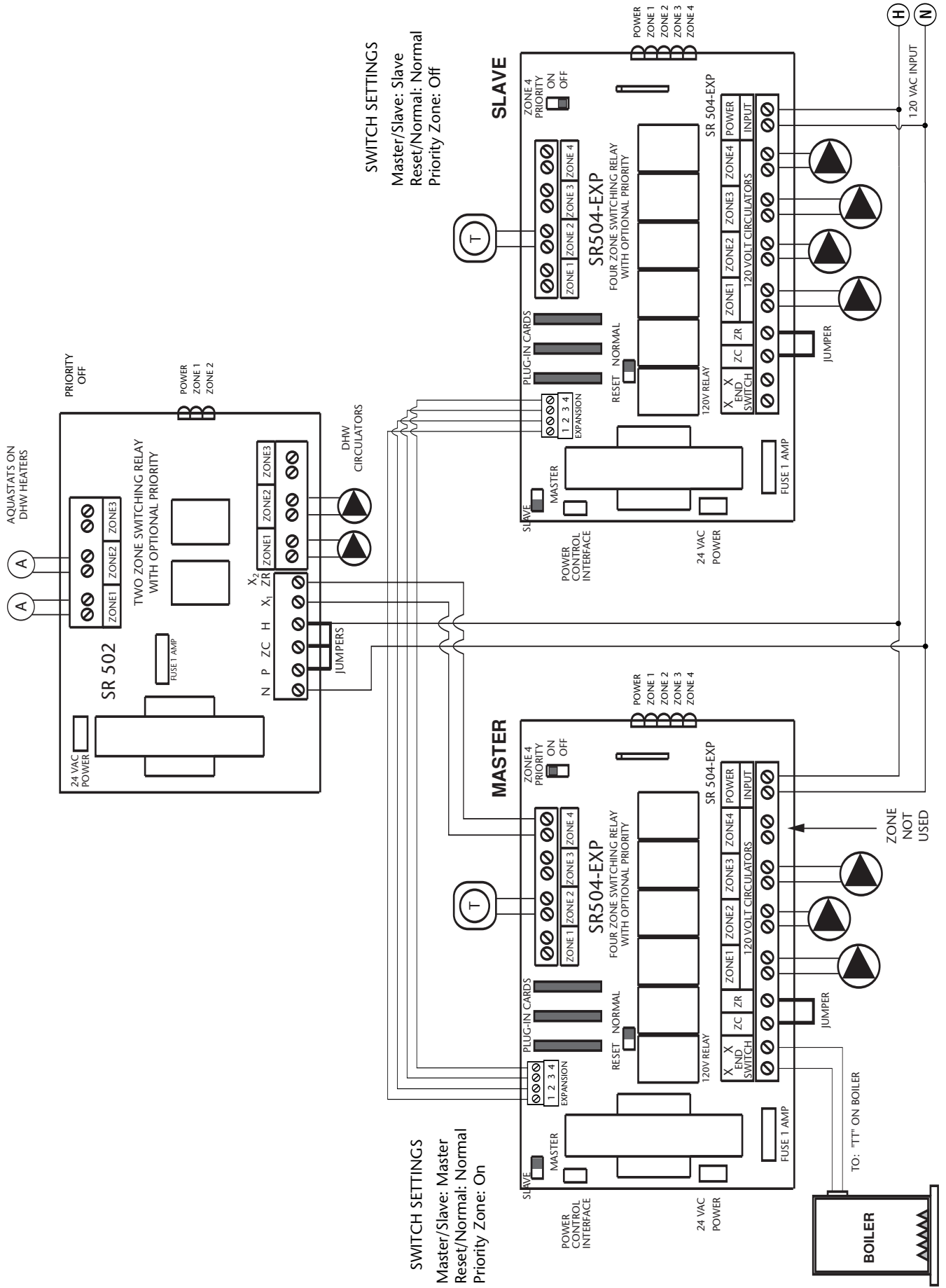
Master/Slave: Master
 Reset/Normal: Normal
 Priority Zone: On



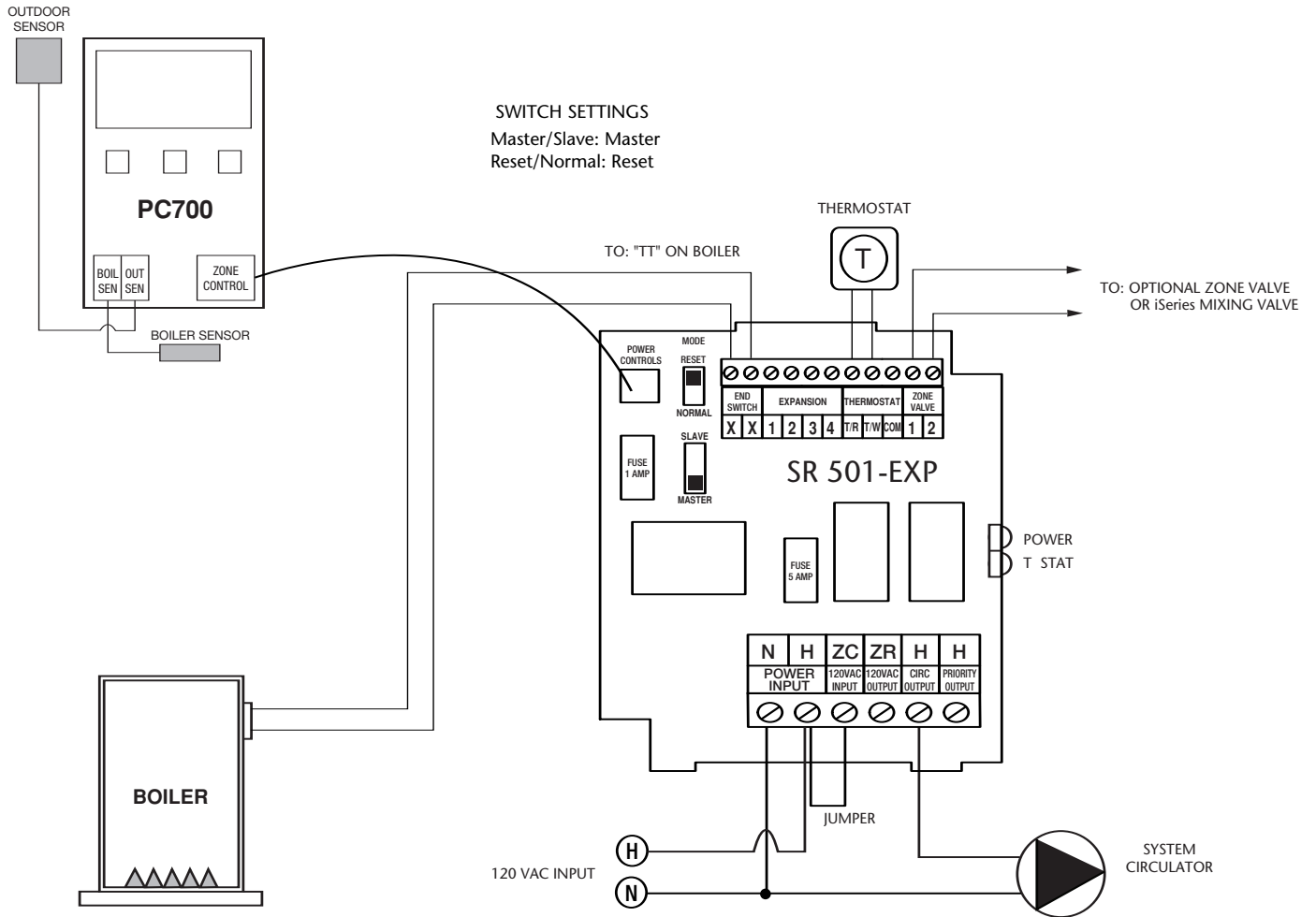
2 Indirect Water Heaters with Priority Connected to Standard Switching Relays



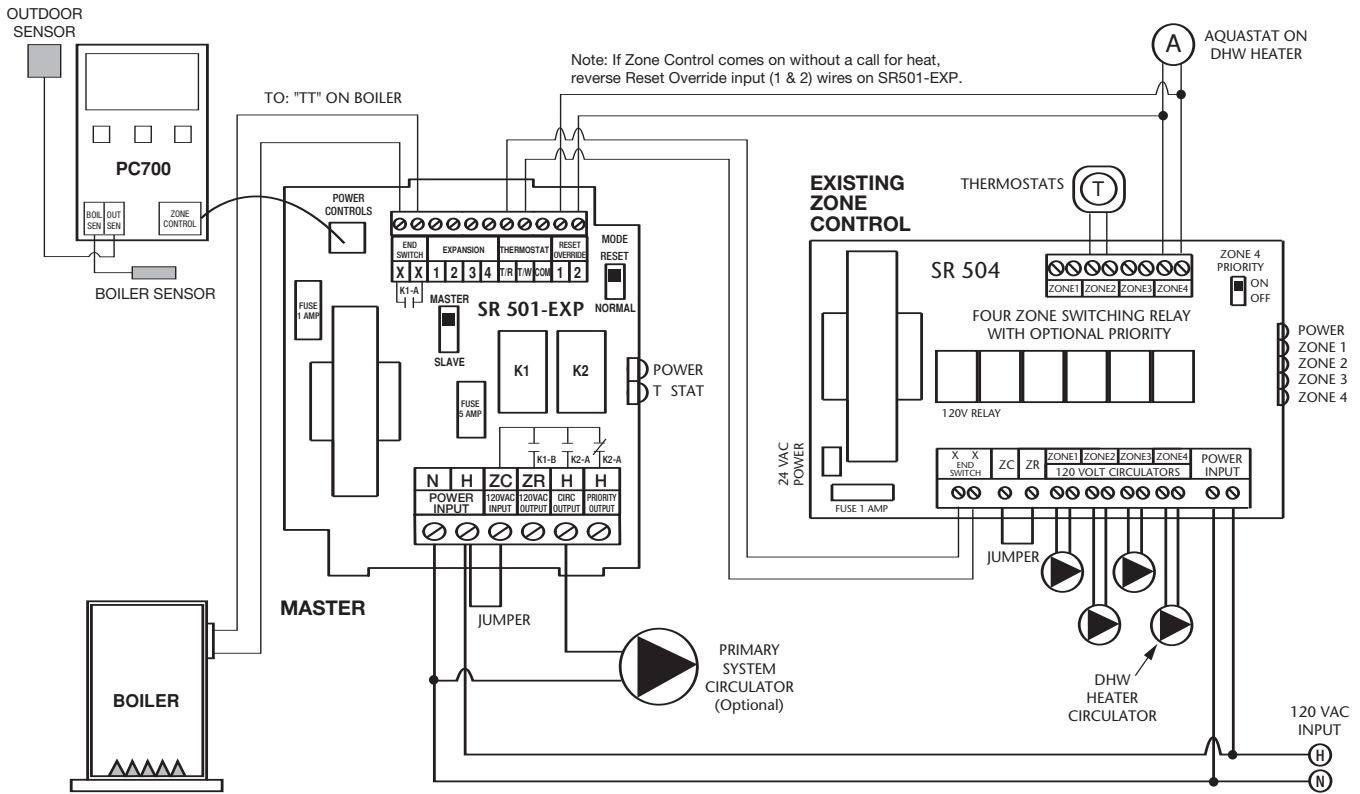
2 Indirect Water Heaters with Priority Connected to EXP Switching Relays



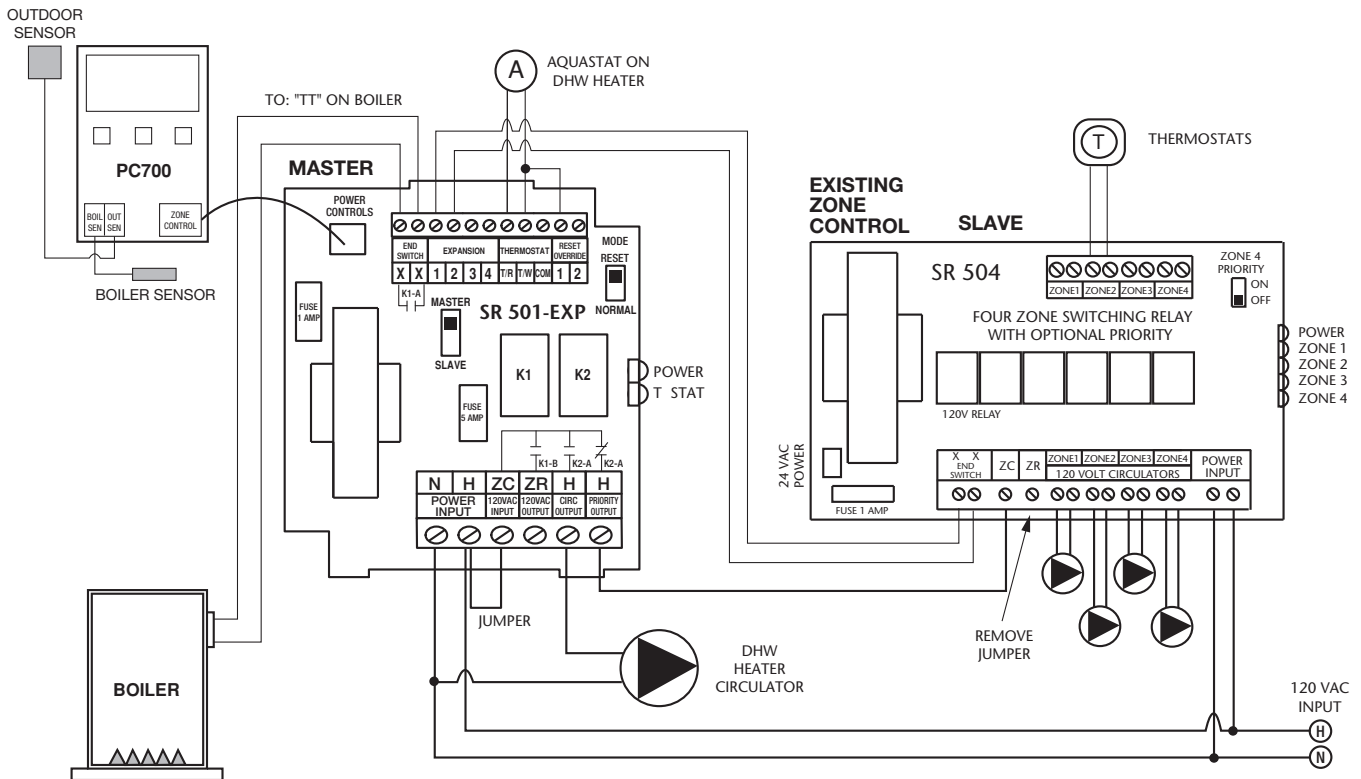
PC700 Boiler Reset Control Connected to SR501-EXP Switching Relay



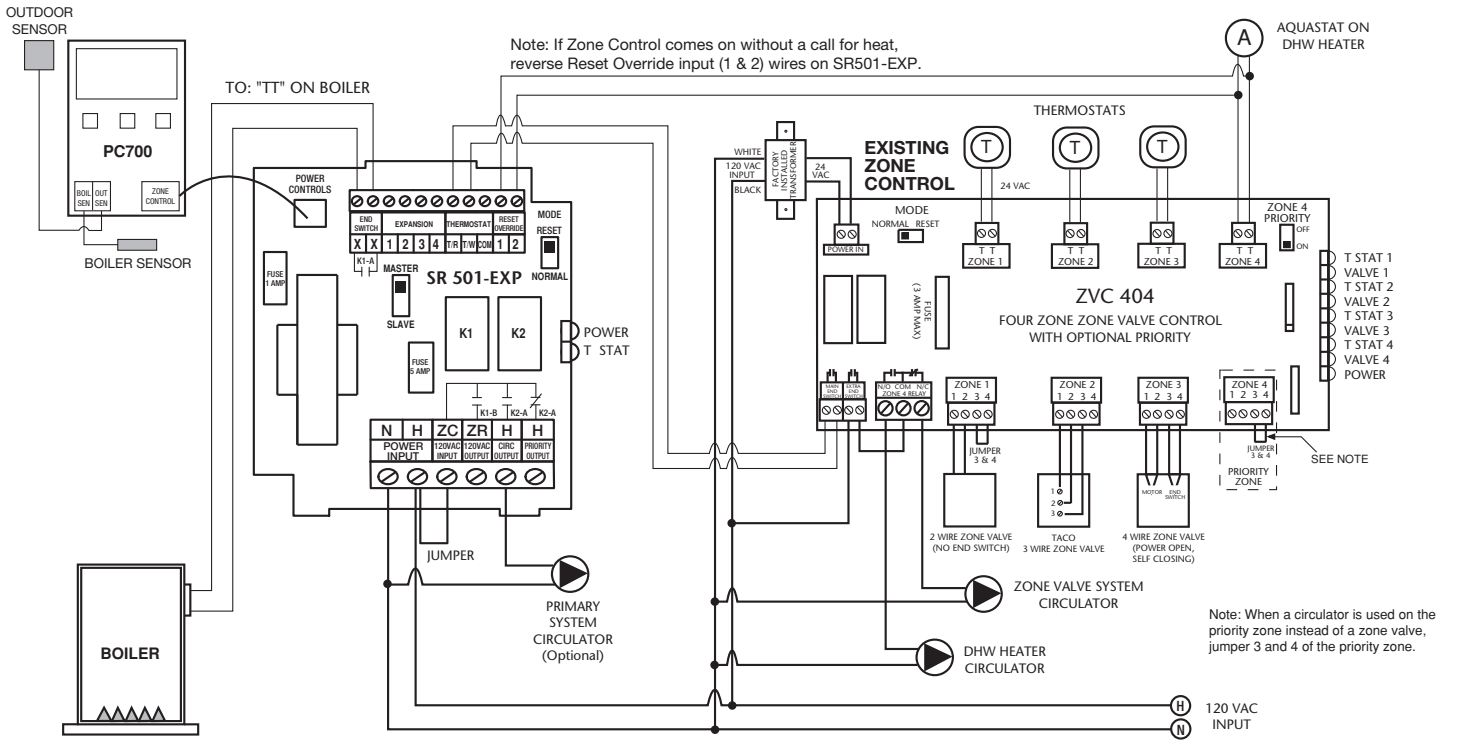
SR501-EXP and PC700 Boiler Reset Control Connected to an Existing Switching Relay



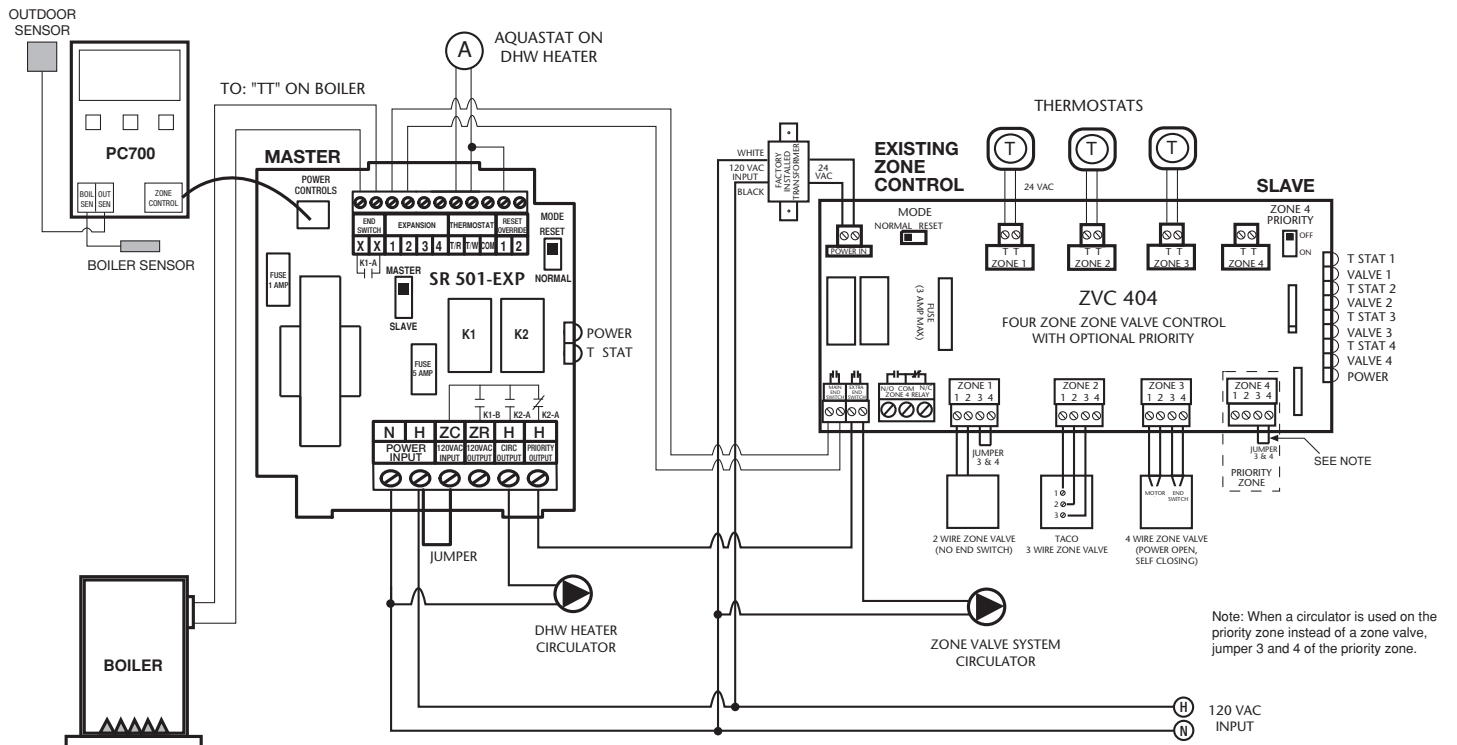
Connecting a DHW Heater to an Existing Heating Only Switching Relay Using an SR501-EXP and PC700 Boiler Reset Control



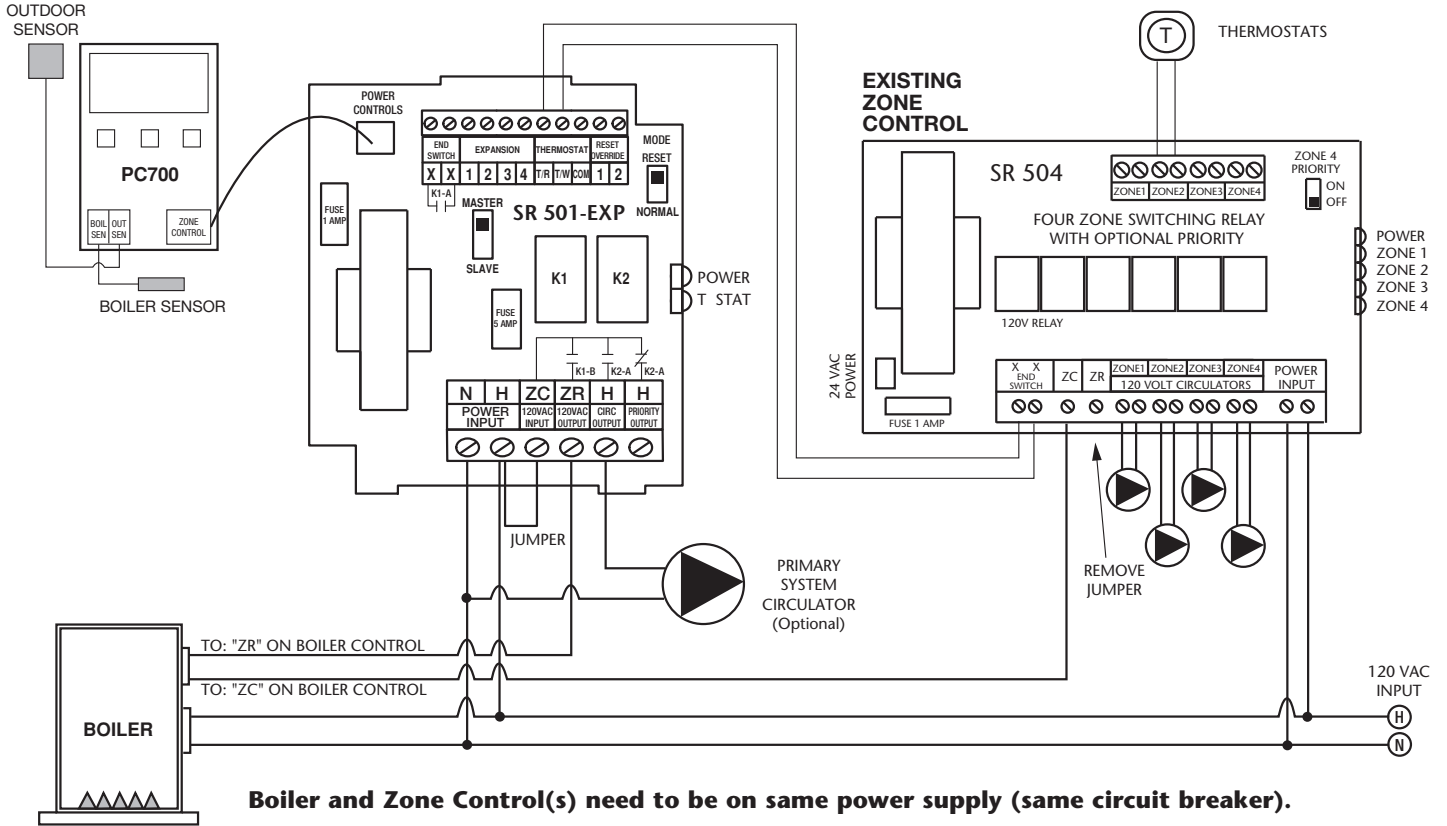
SR501-EXP and PC700 Boiler Reset Control Connected to an Existing Zone Valve Control



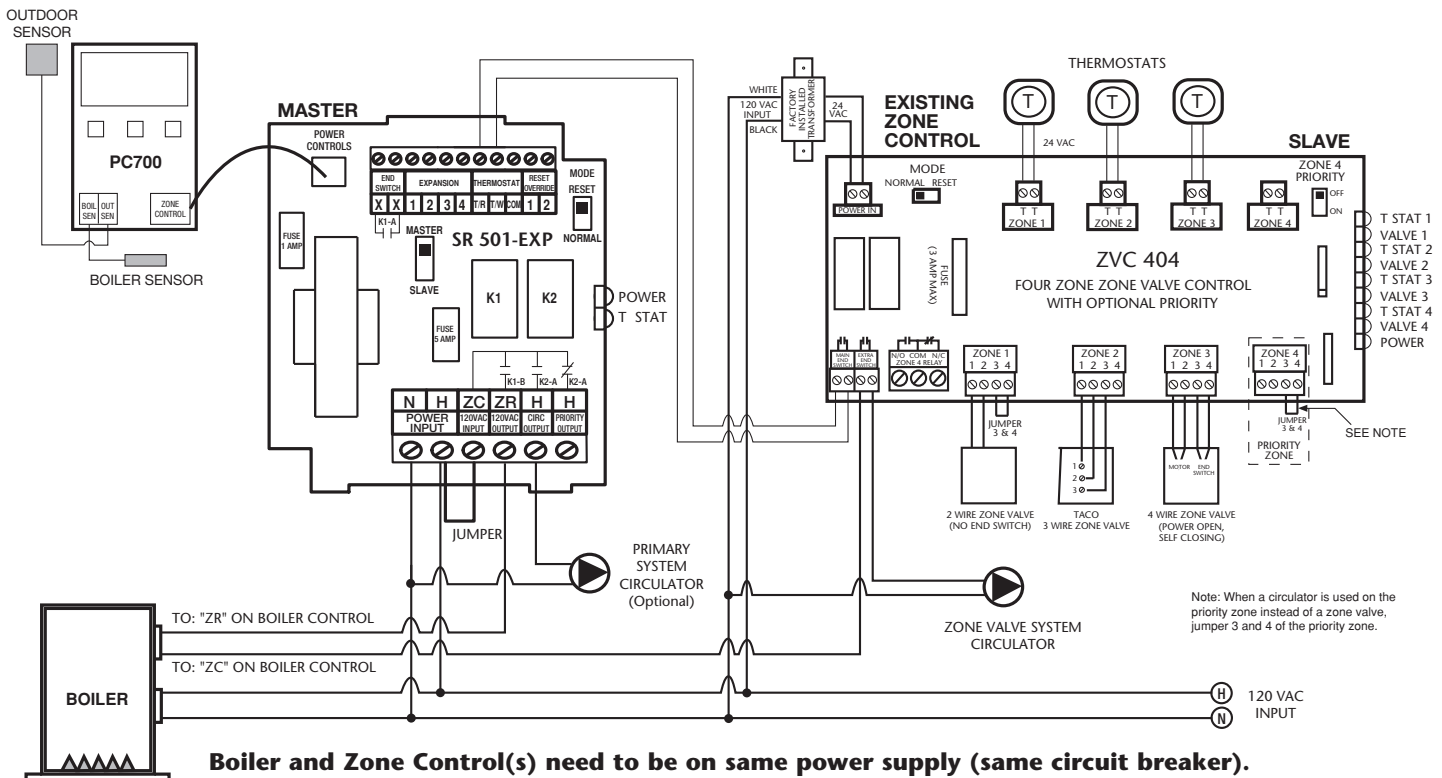
Connecting a DHW Heater to an Existing Heating Only Zone Valve Control Using an SR501-EXP and PC700 Boiler Reset Control



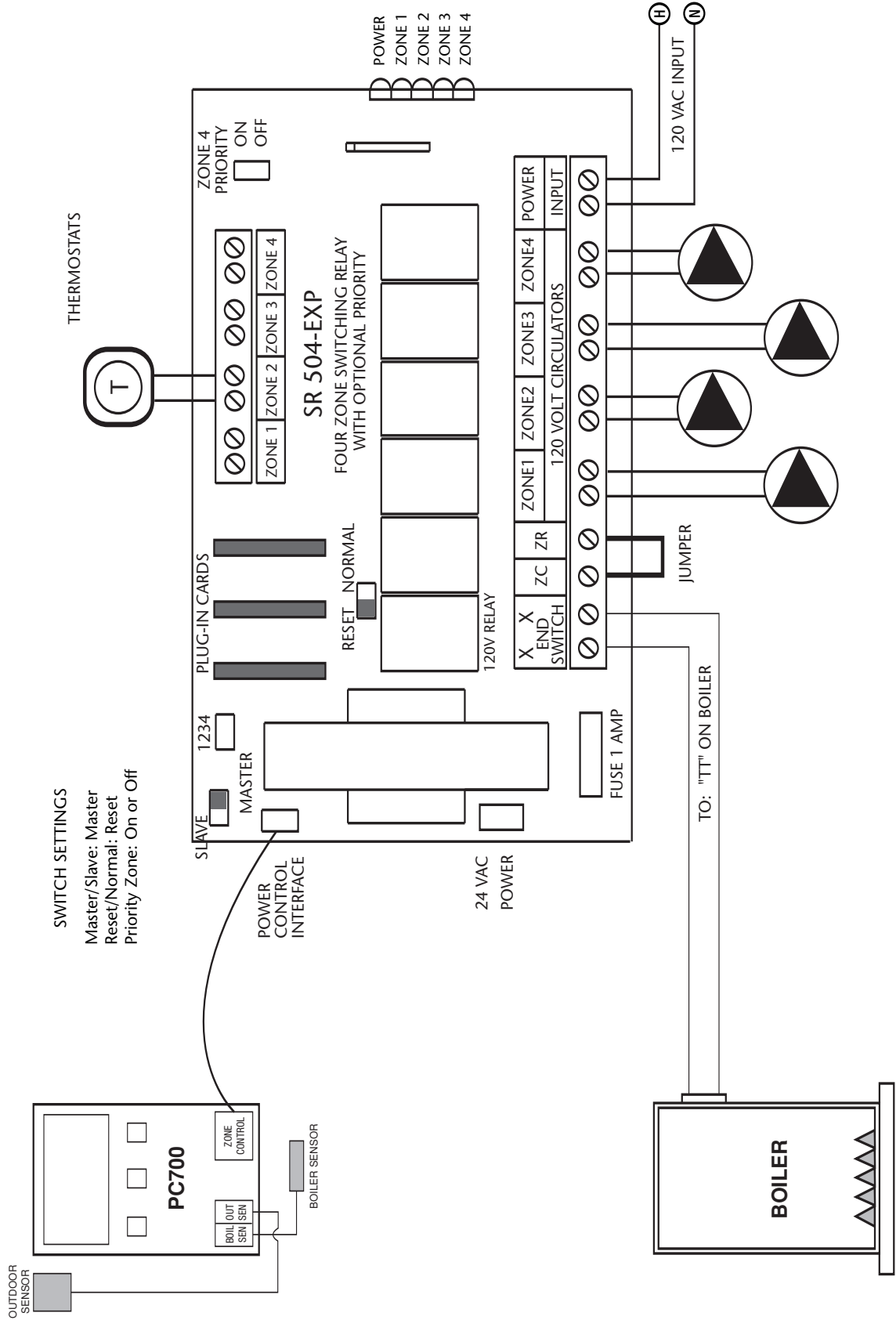
SR501-EXP and PC700 Boiler Reset Control Connected to an Existing Tankless Coil Boiler – Zoning with Circulators



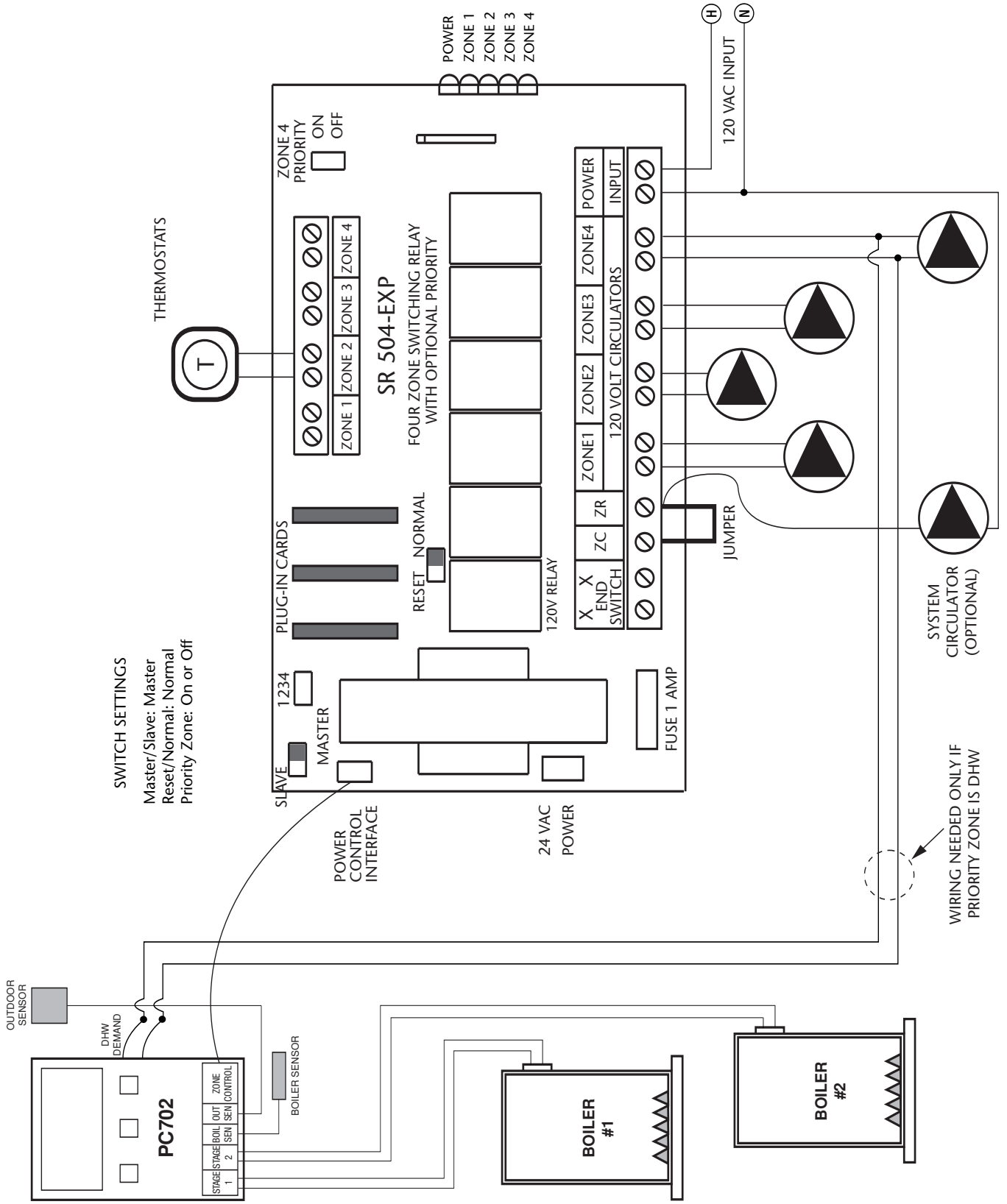
SR501-EXP and PC700 Boiler Reset Control Connected to an Existing Tankless Coil Boiler – Zoning with Zone Valves



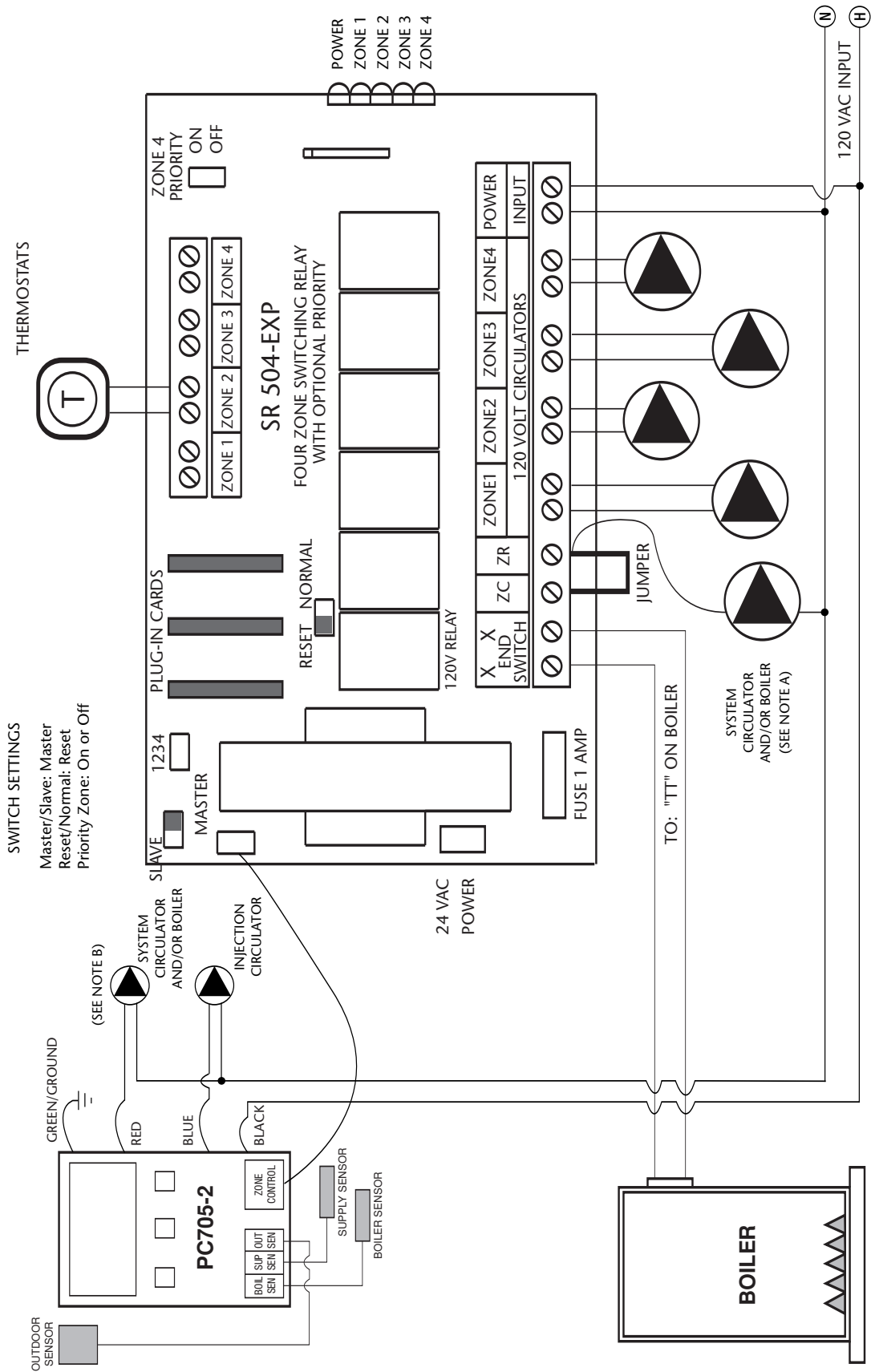
PC700 Boiler Reset Control Connected to EXP Switching Relay



PC702 2-Stage Boiler Reset Control Connected to EXP Switching Relay



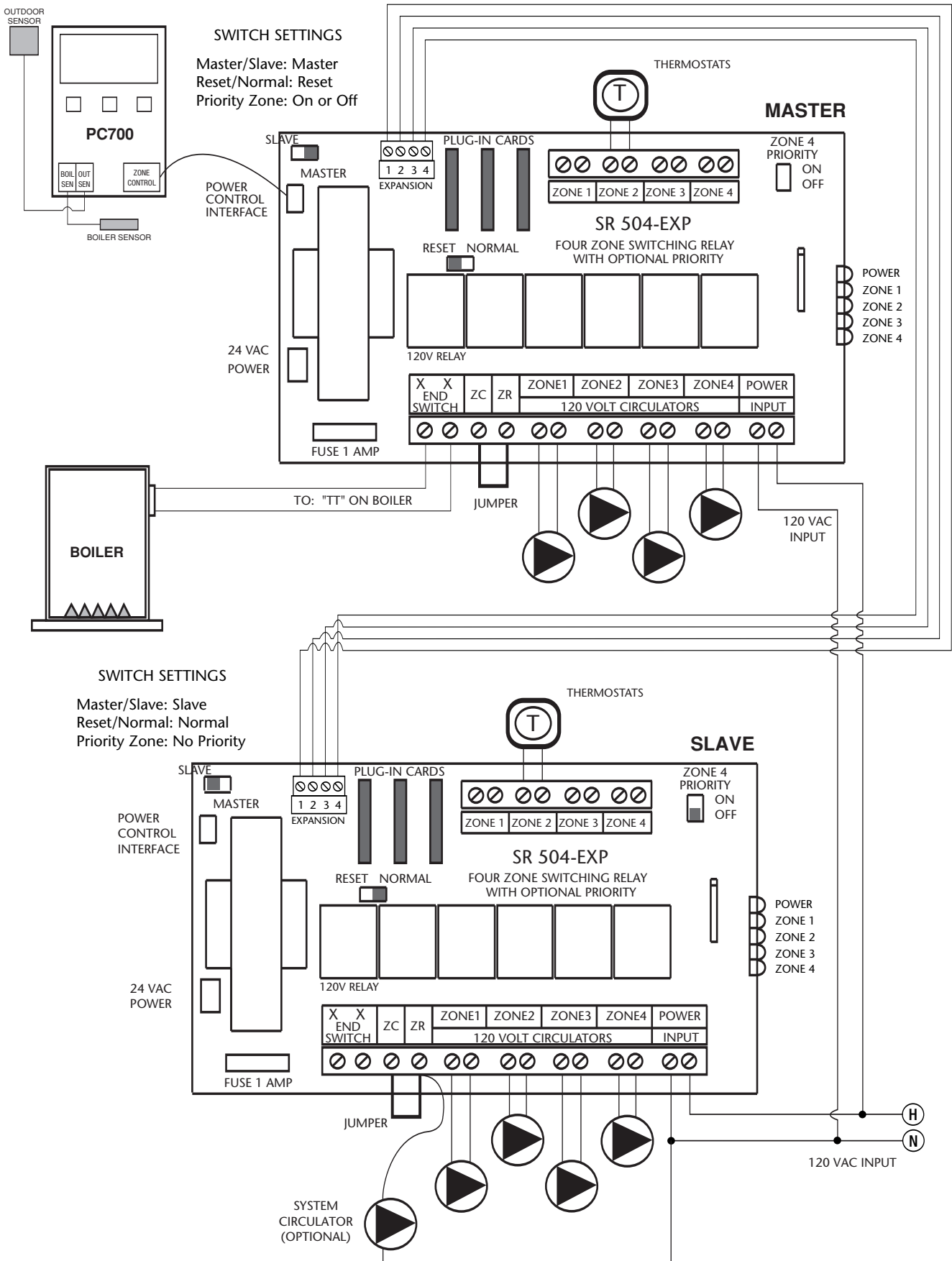
PC705 Variable Speed Pump Injection Control Connected to EXP Switching Relay



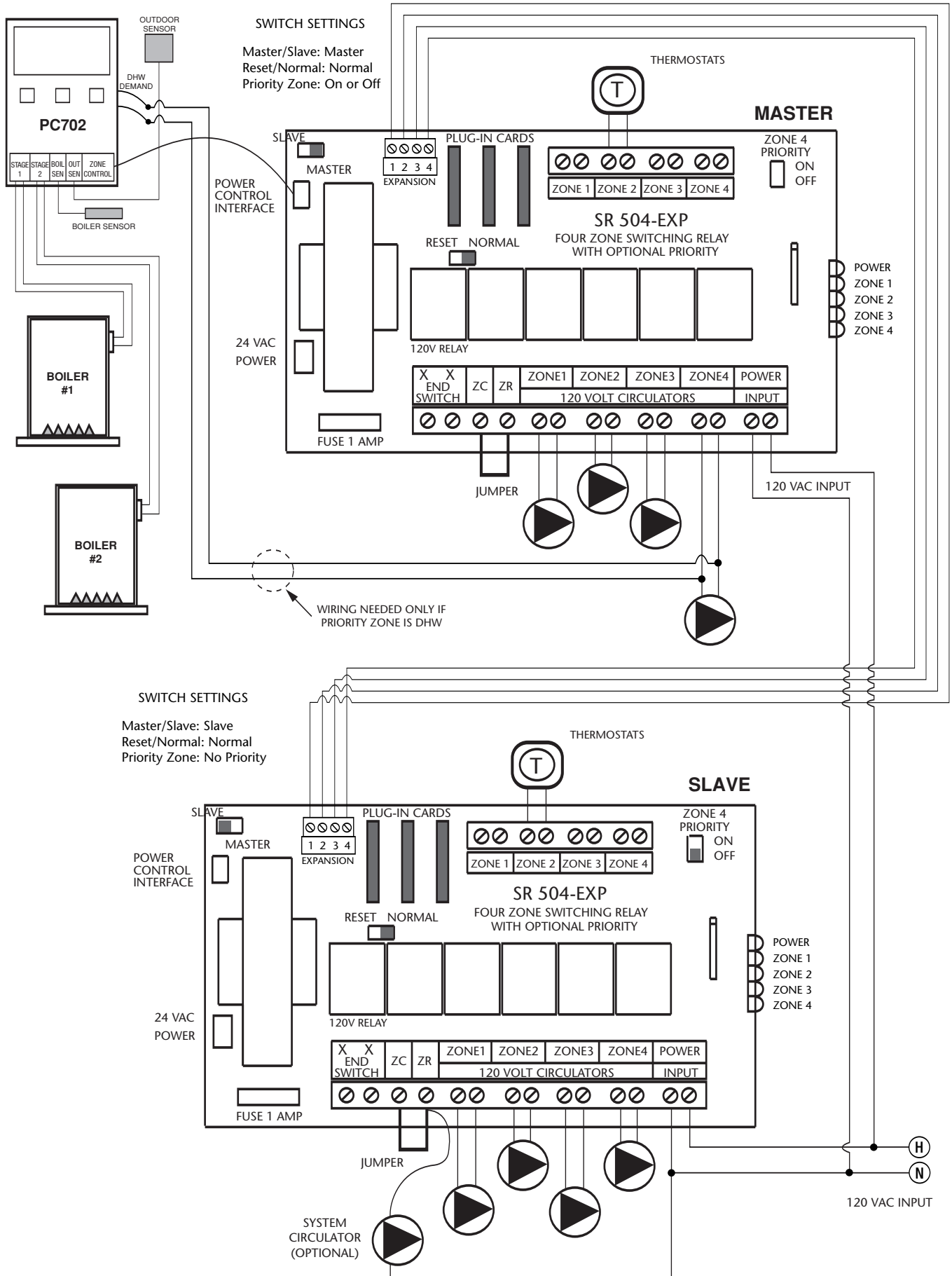
NOTE A: WHEN SYSTEM CIRCULATOR IS CONNECTED TO ZR TERMINAL ON SWITCHING RELAY, THE MODE SWITCH MUST BE SET TO NORMAL. THE PC705-2 WILL NOT RESET THE BOILER WHEN IN THE NORMAL MODE.

NOTE B: WHEN SYSTEM CIRCULATOR IS CONNECTED TO RED WIRE ON PC705-2, THE CIRCULATOR WILL OPERATE ONLY WHEN THERMOSTAT CALLS FOR HEAT AND THE OUTDOOR TEMPERATURE IS BELOW THE WARM WEATHER SHUT DOWN (WWSD) TEMPERATURE. THE WWSD CAN BE ADJUSTED OR TURNED OFF SO THAT THE CIRCULATOR IS NOT AFFECTED BY OUTDOOR TEMPERATURE.

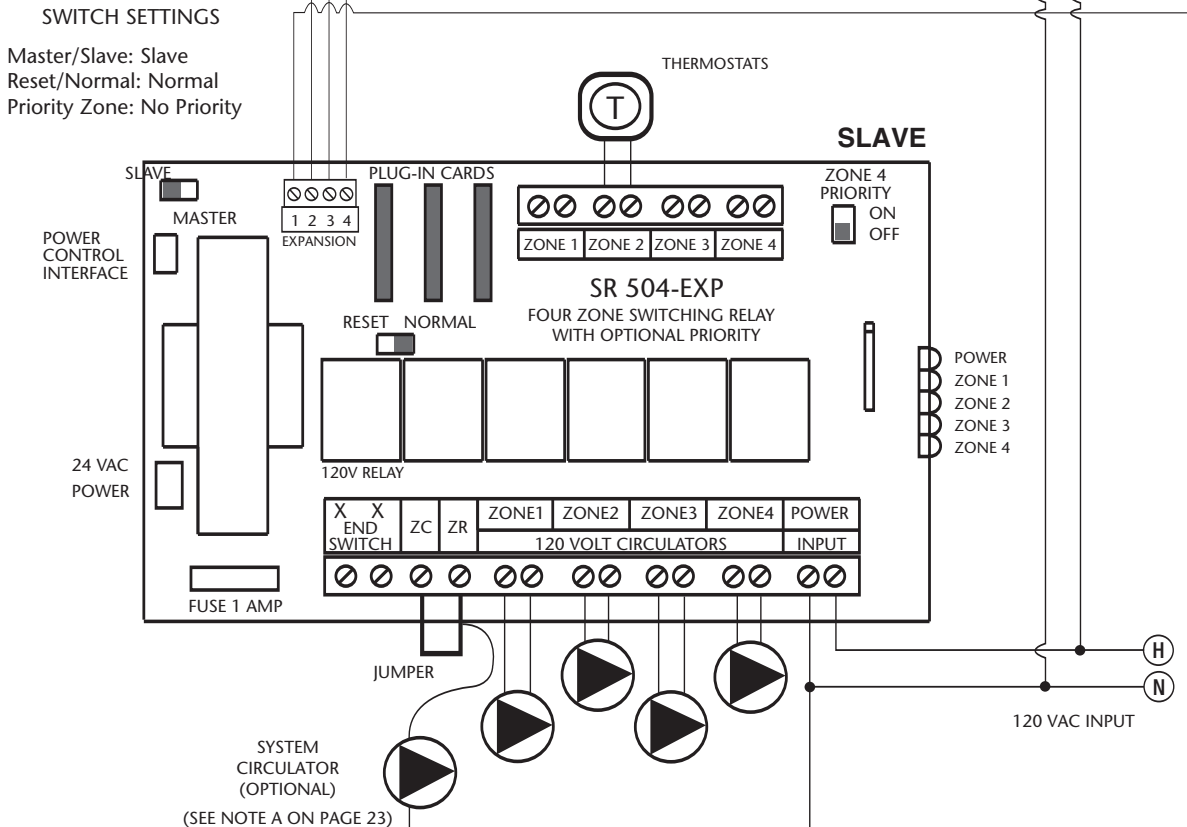
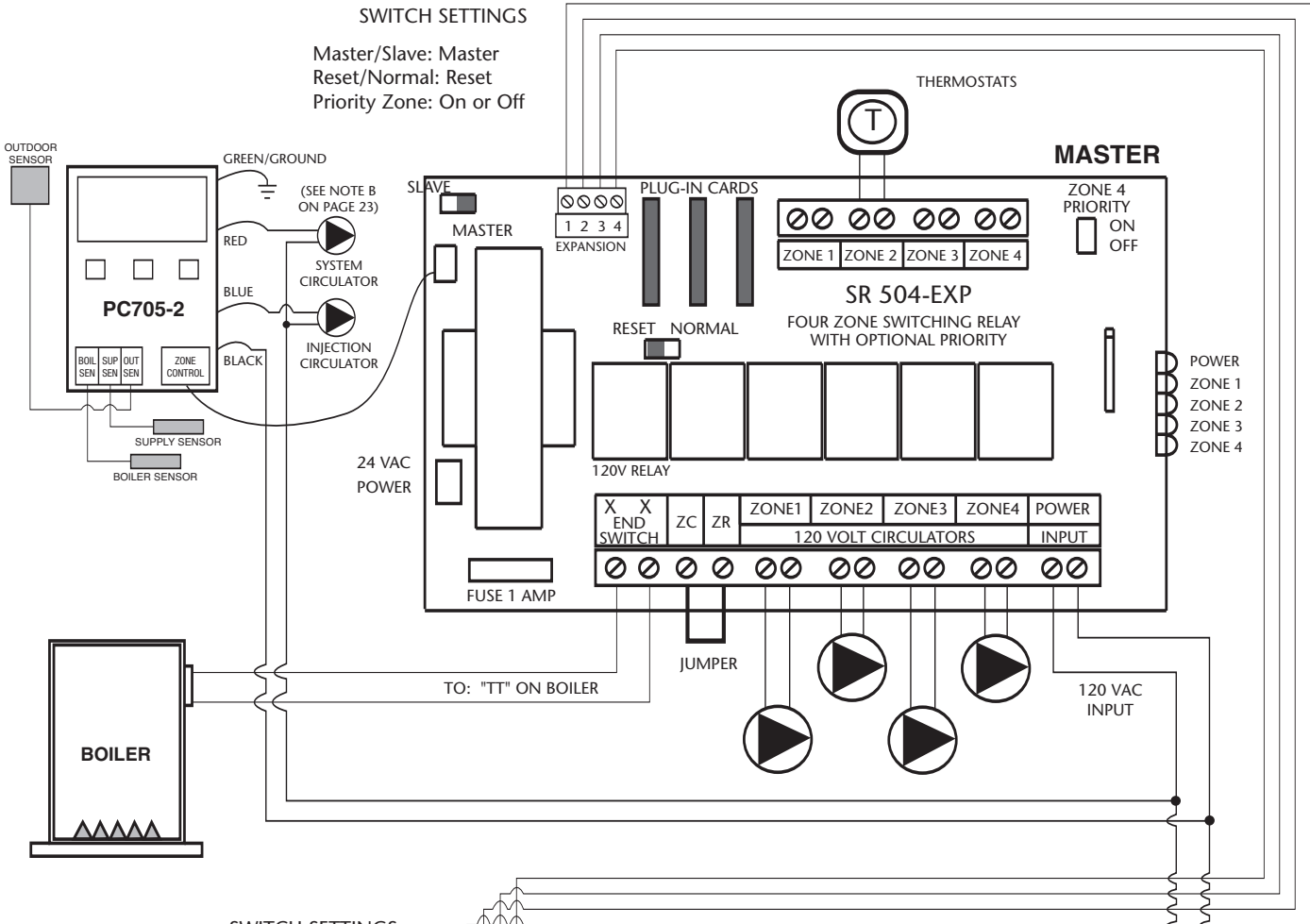
PC700 Boiler Reset Control Connected to 2 EXP Switching Relays



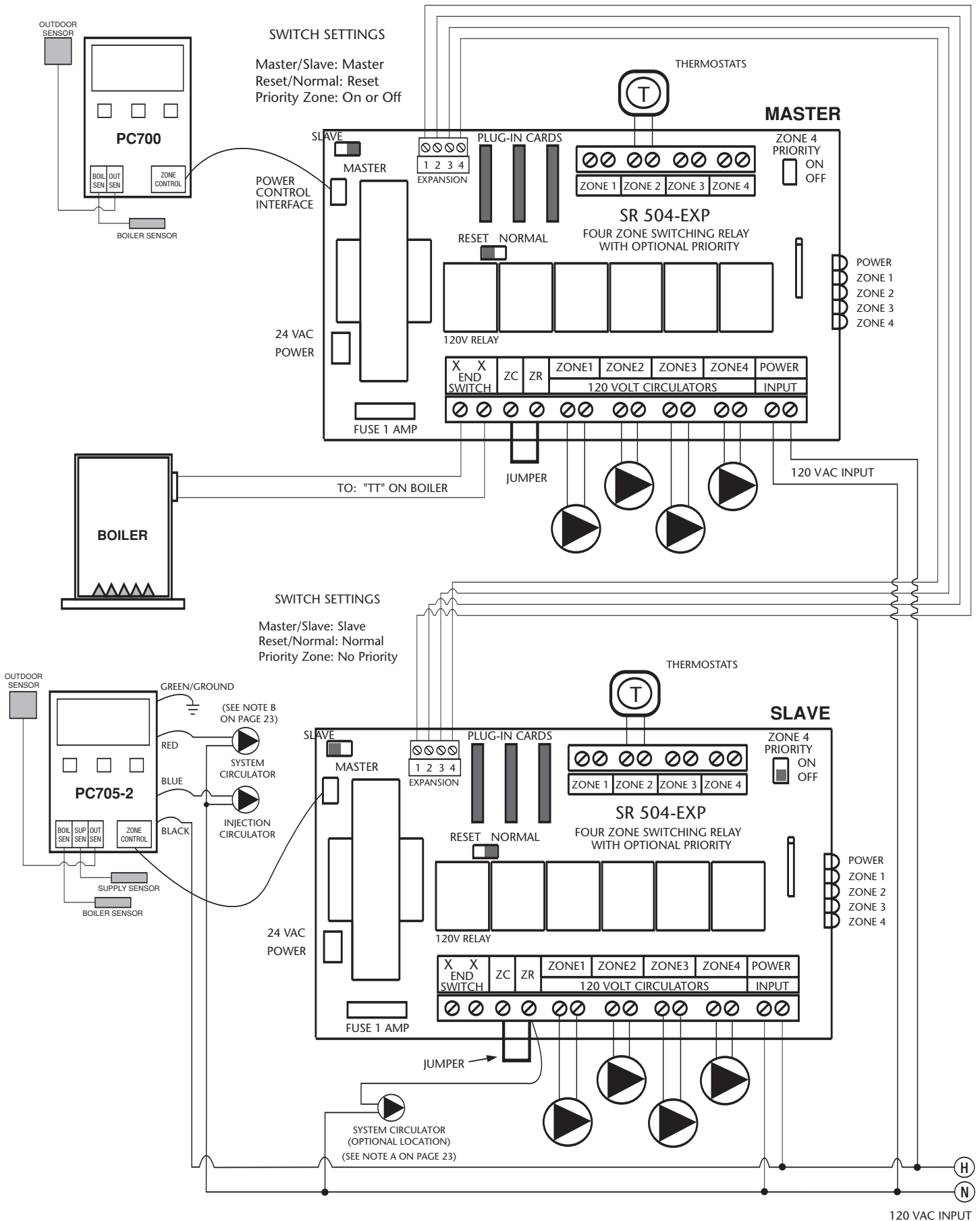
PC702 2-Stage Boiler Reset Control Connected to 2 EXP Switching Relays



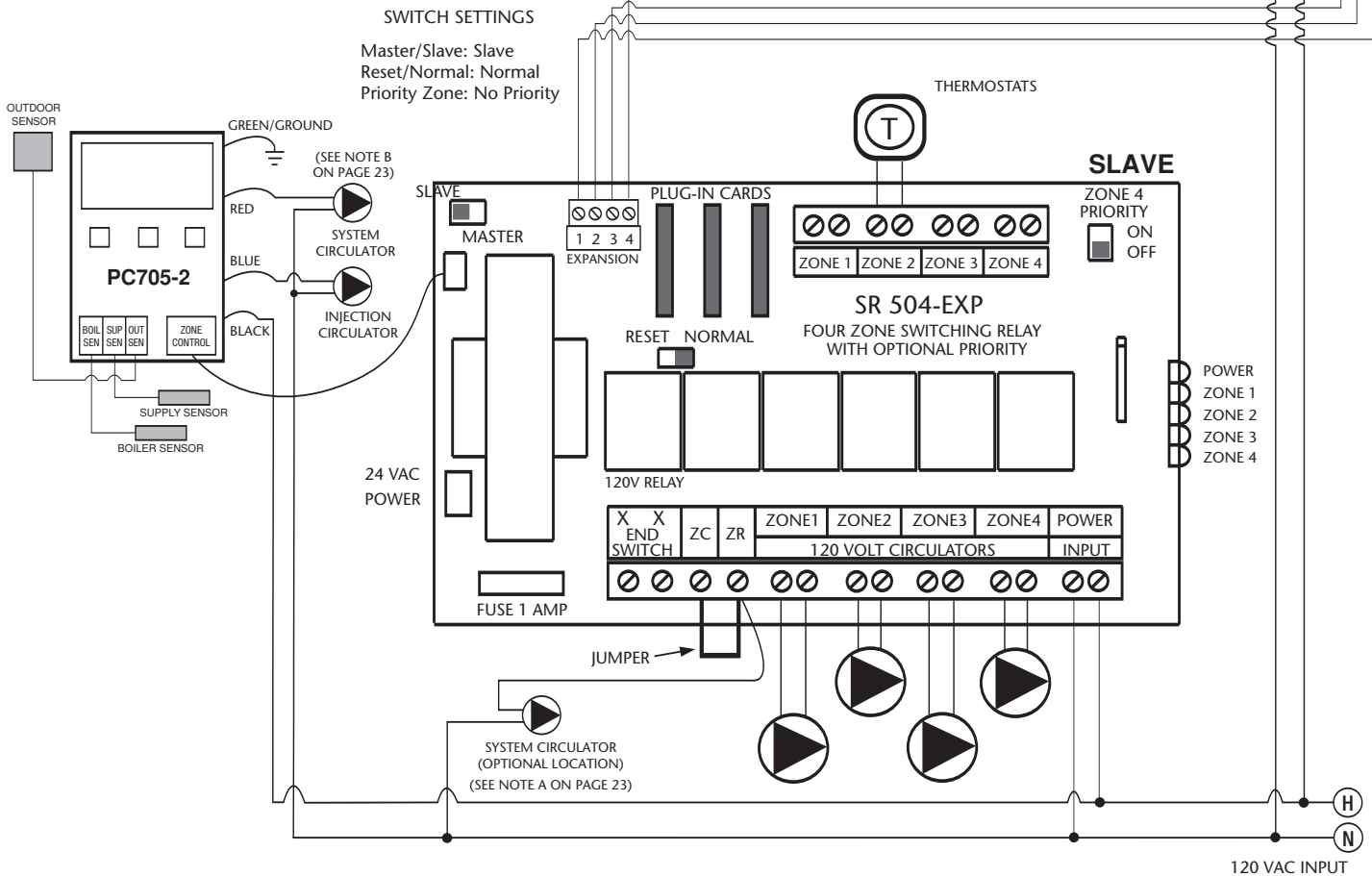
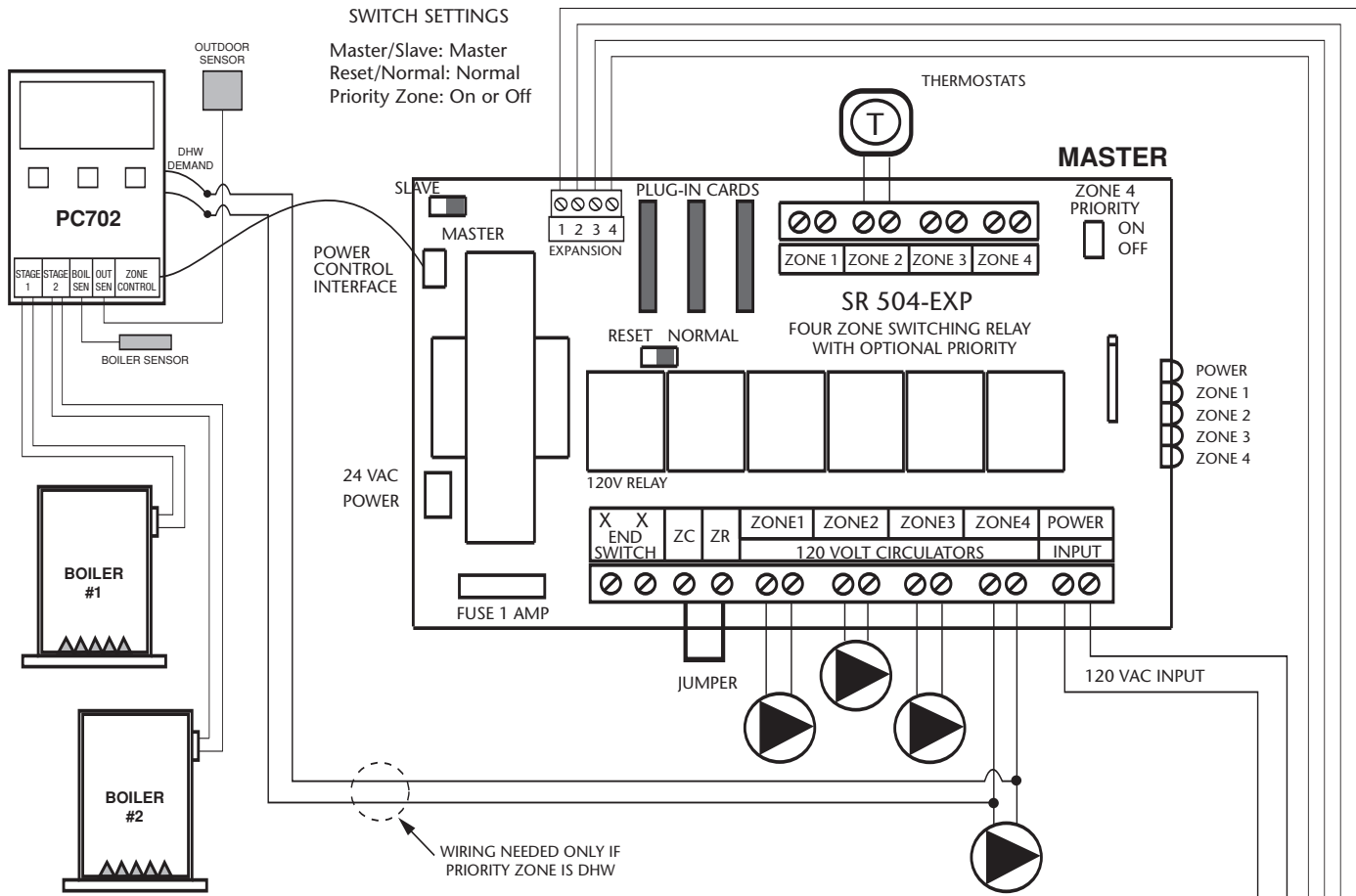
PC705 Variable Speed Pump Injection Control Connected to 2 EXP Switching Relays



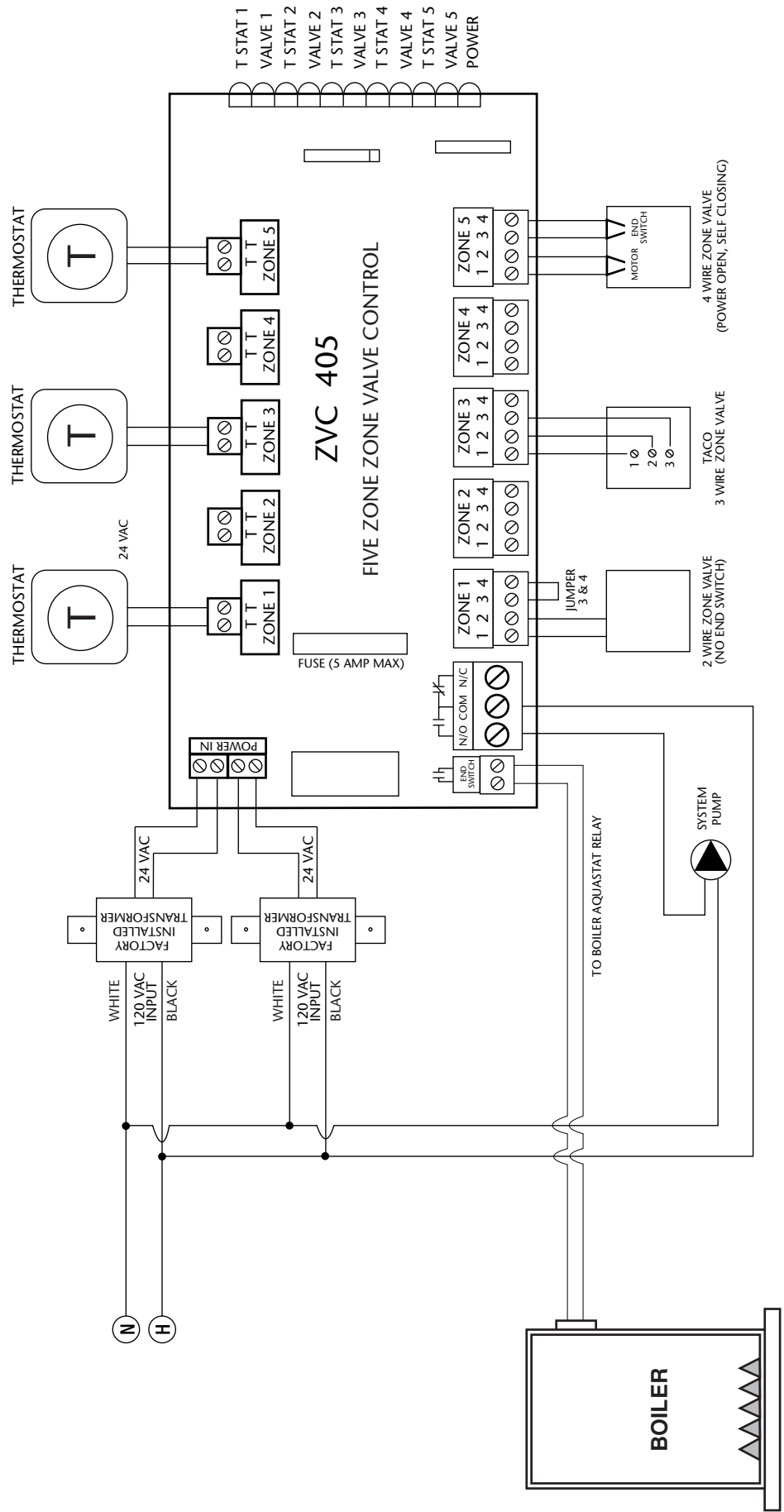
PC700 and PC705 Controls Connected to 2 EXP Switching Relays



PC702 and PC705 Controls Connected to 2 EXP Switching Relays

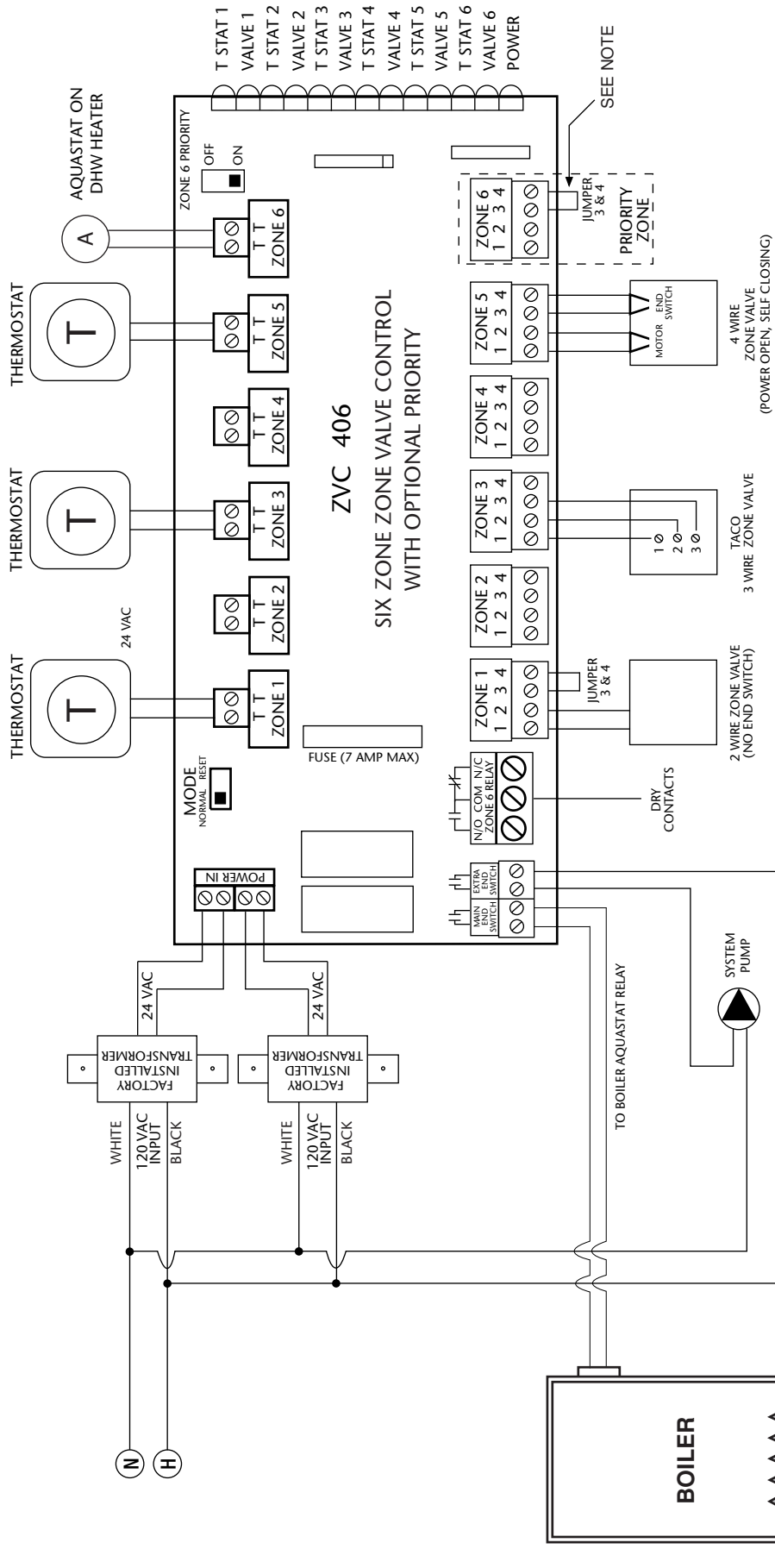


ZVC403/405 with System Pump



SYSTEM PUMP AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS.

ZVC404/406 with System Pump

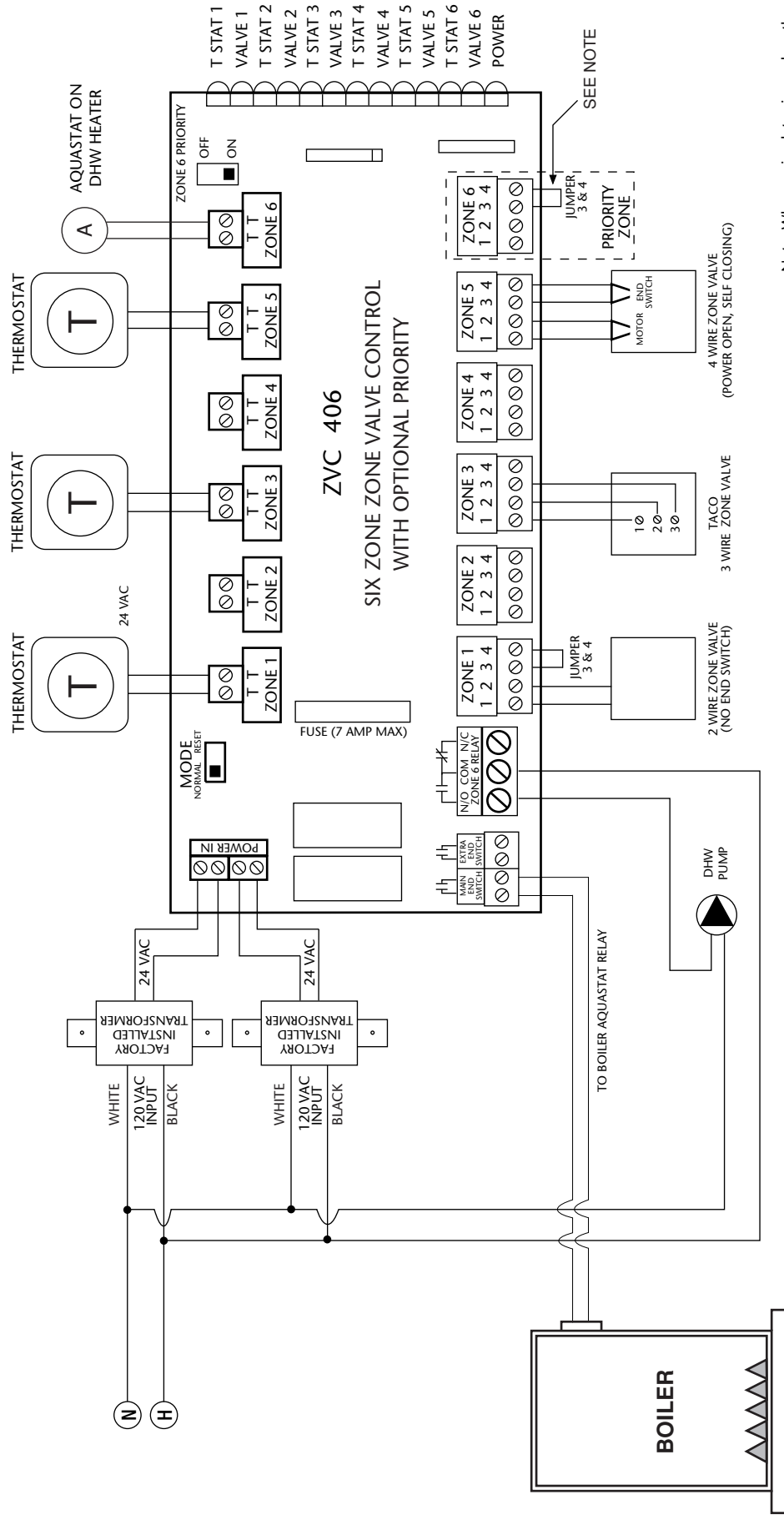


SEE NOTE

SYSTEM PUMP AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS.

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

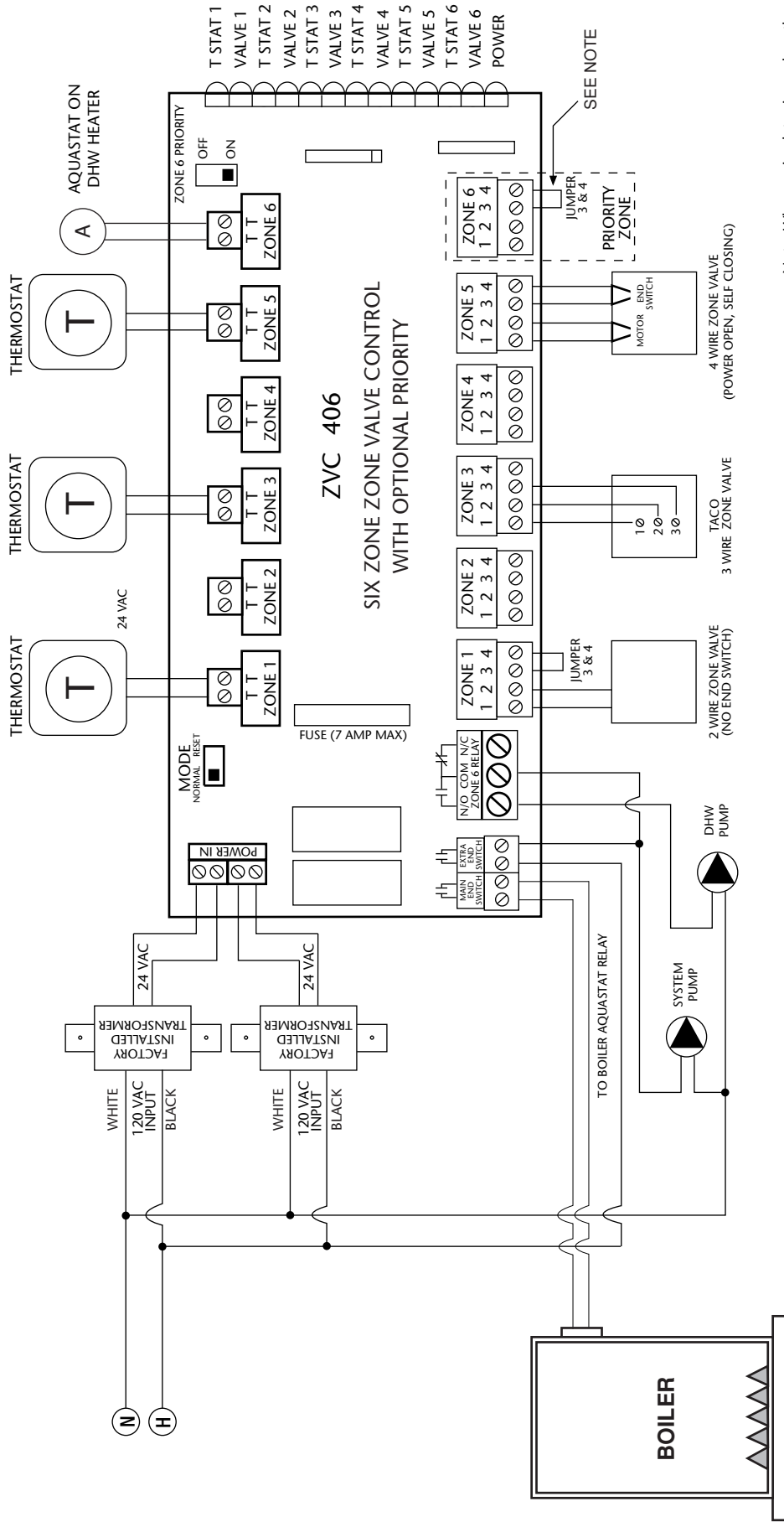
ZVC404/406 with Domestic Hot Water (DHW) Pump



Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

BOILER TURNS ON WHEN ANY ZONE VALVE OPENS.
 DHW PUMP TURNS ON **ONLY** WHEN PRIORITY ZONE CALLS.

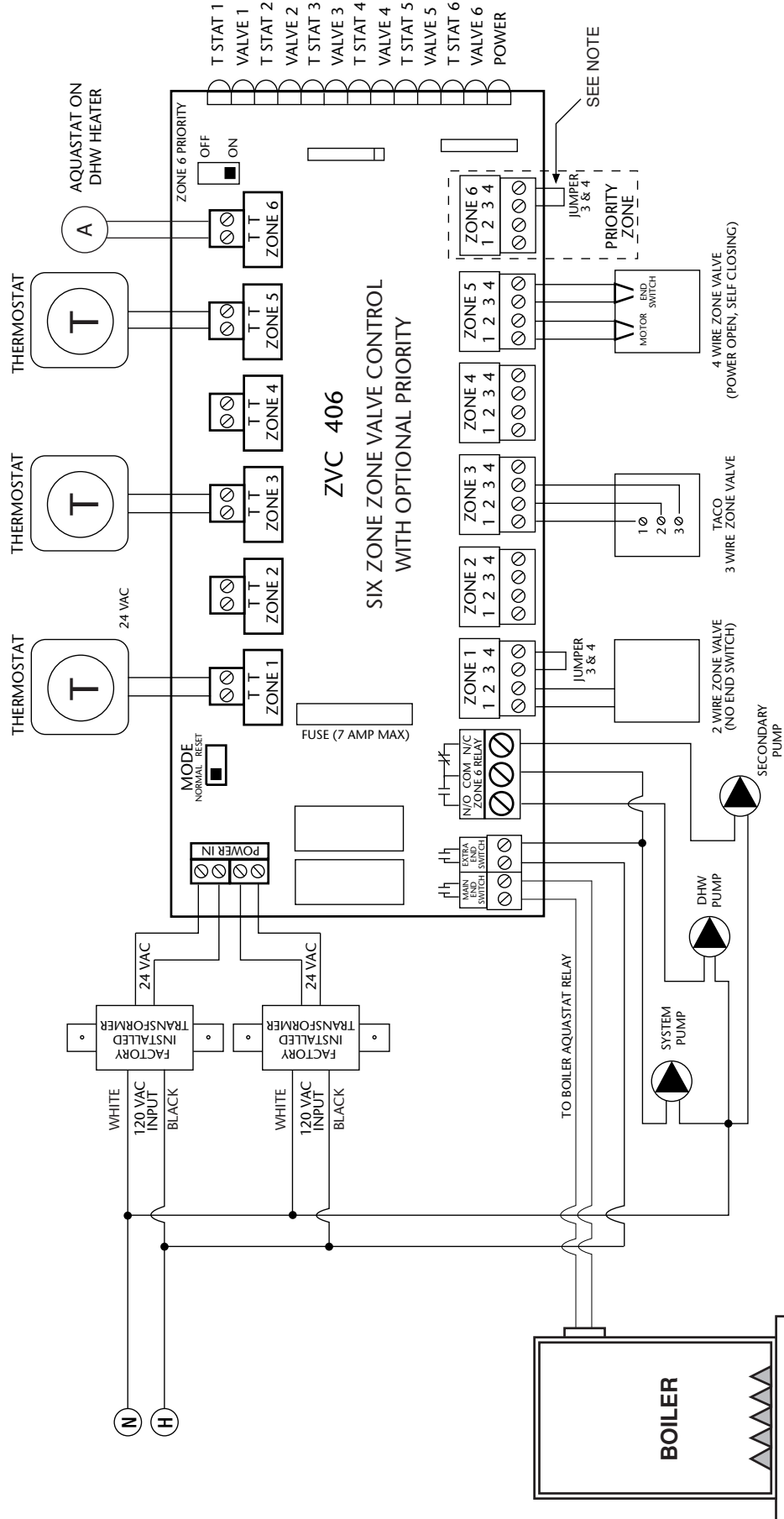
ZVC404/406 with System and DHW Pumps



Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

SYSTEM PUMP AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS.
DHW PUMP TURNS ON **ONLY** WHEN PRIORITY ZONE CALLS.

ZVC404/406 with System, DHW and Secondary Pumps



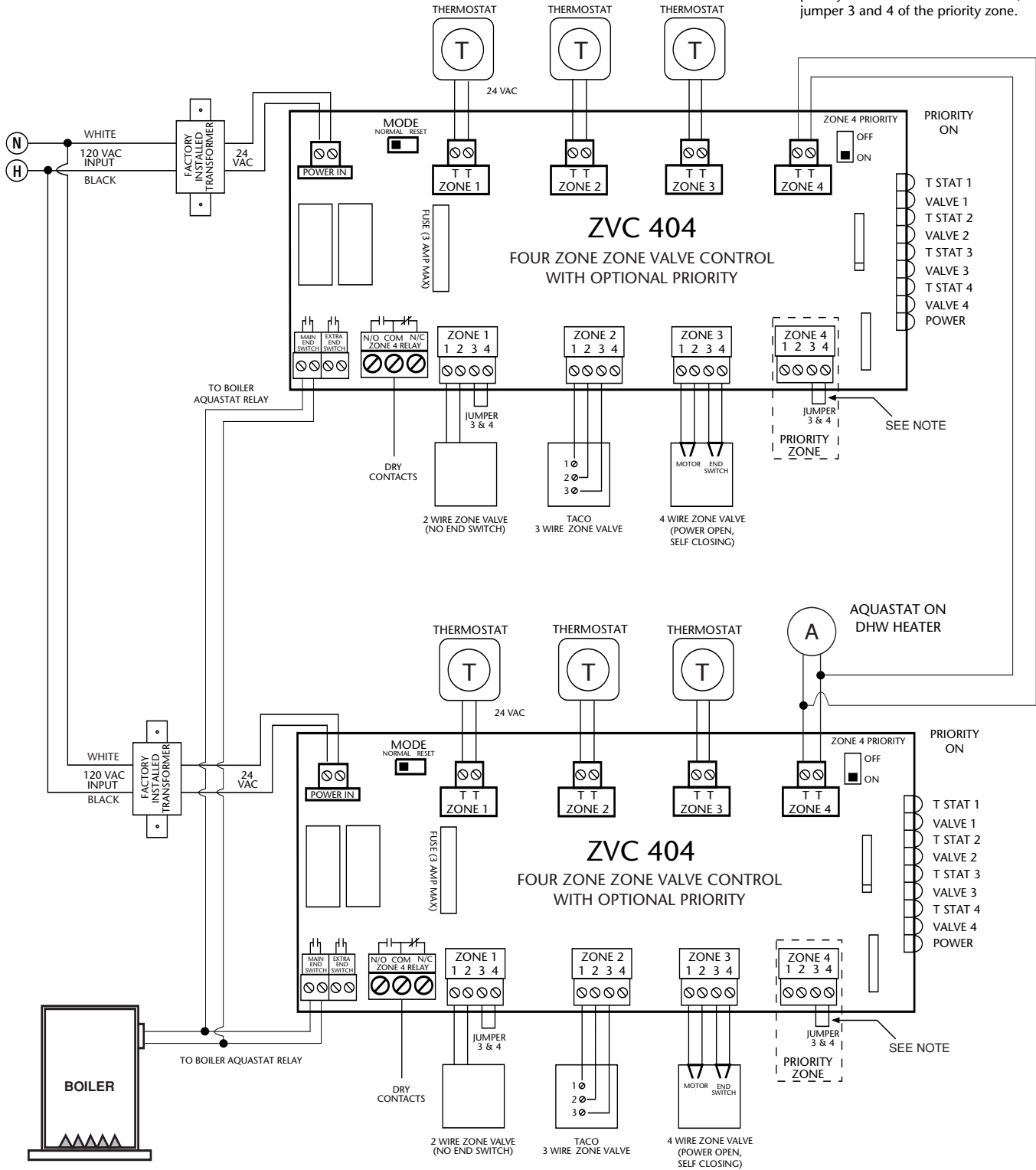
SEE NOTE

SYSTEM PUMP AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS.
 DHW PUMP TURNS ON **ONLY** WHEN PRIORITY ZONE CALLS.
 SECONDARY PUMP COMES ON WHEN ANY ZONE CALLS **EXCEPT** PRIORITY ZONE.

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

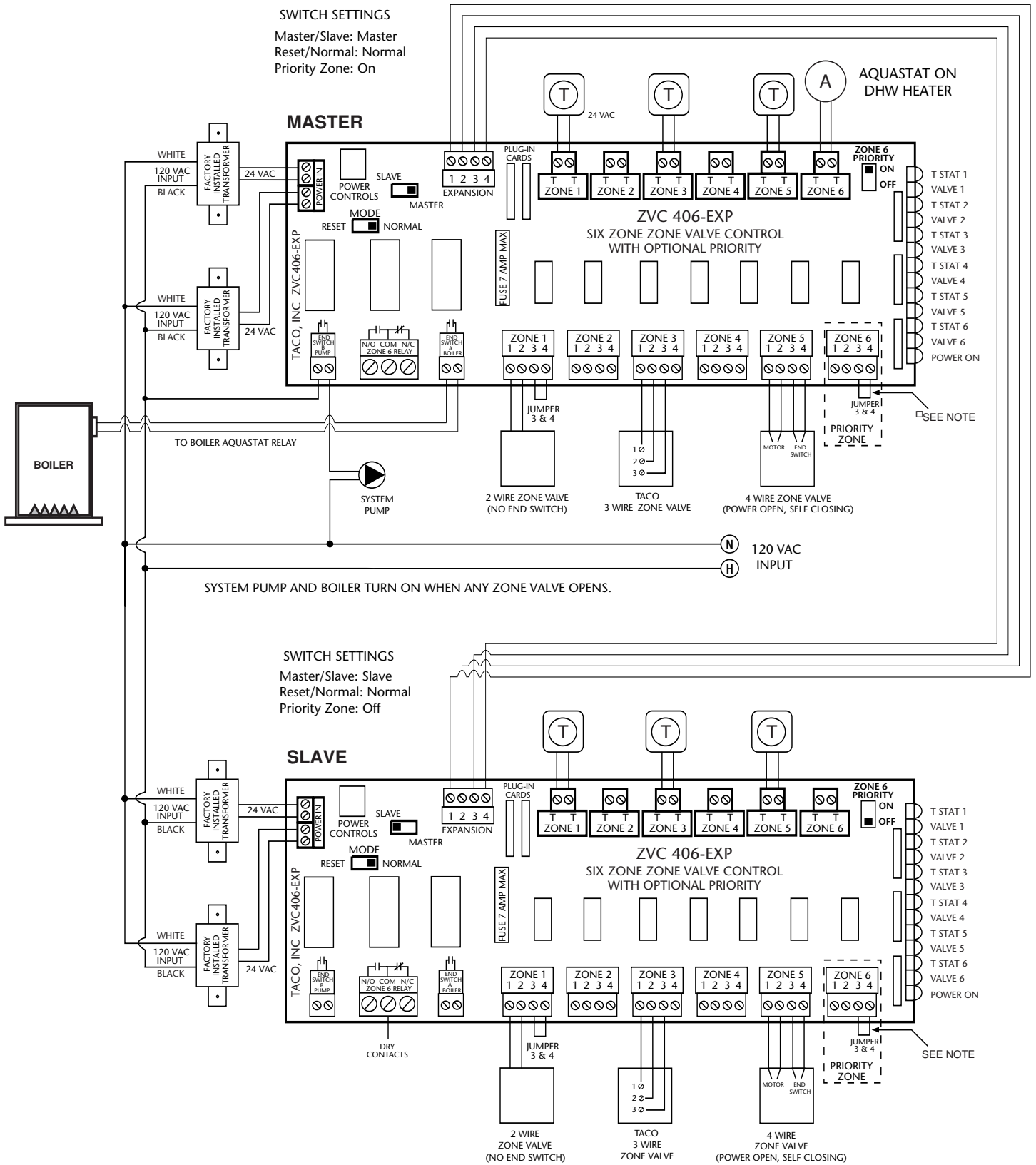
2 ZVC404/406 Connected Together with Priority

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.



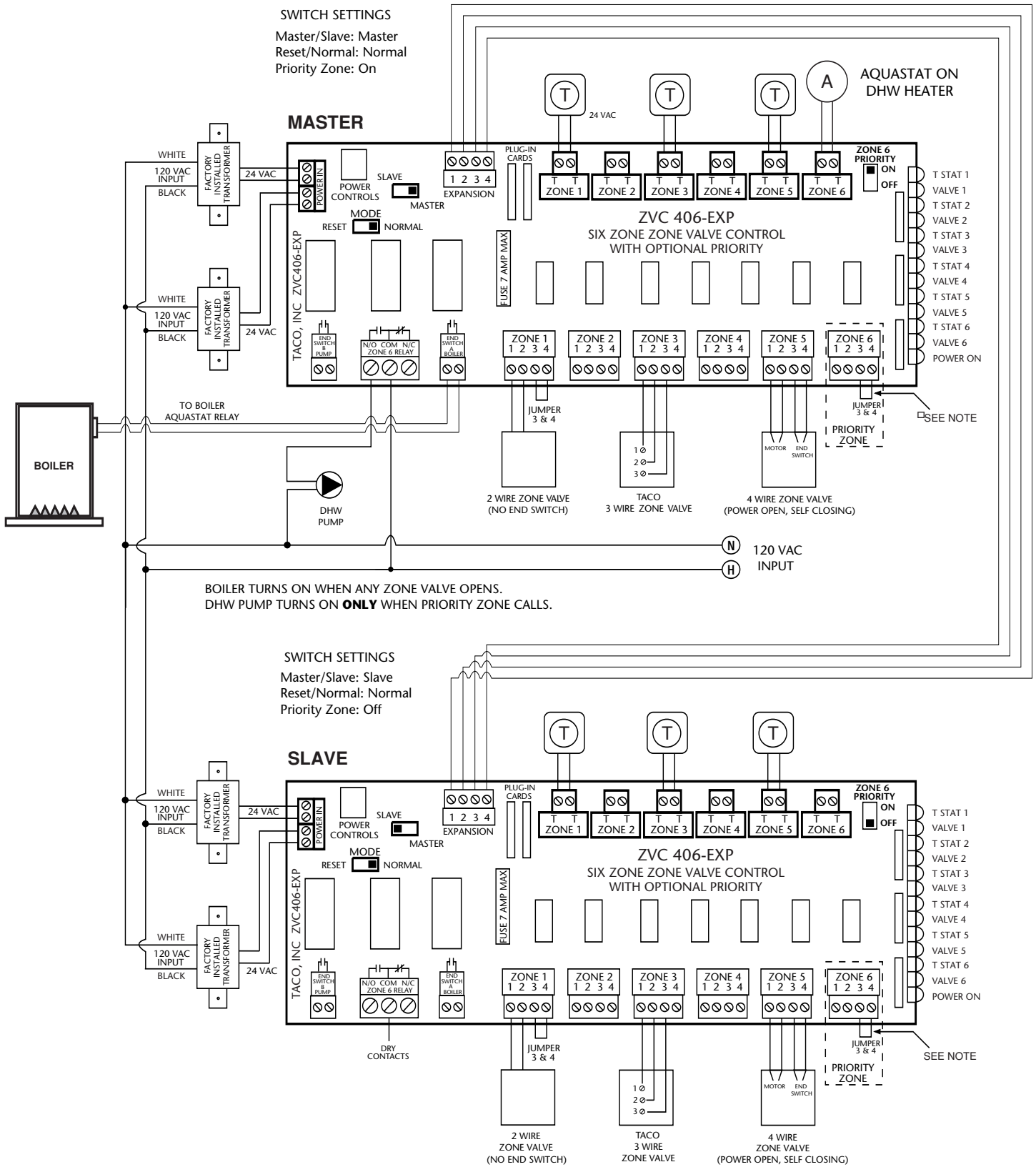
2 EXP Zone Valve Controls Connected Together with System Pump

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.



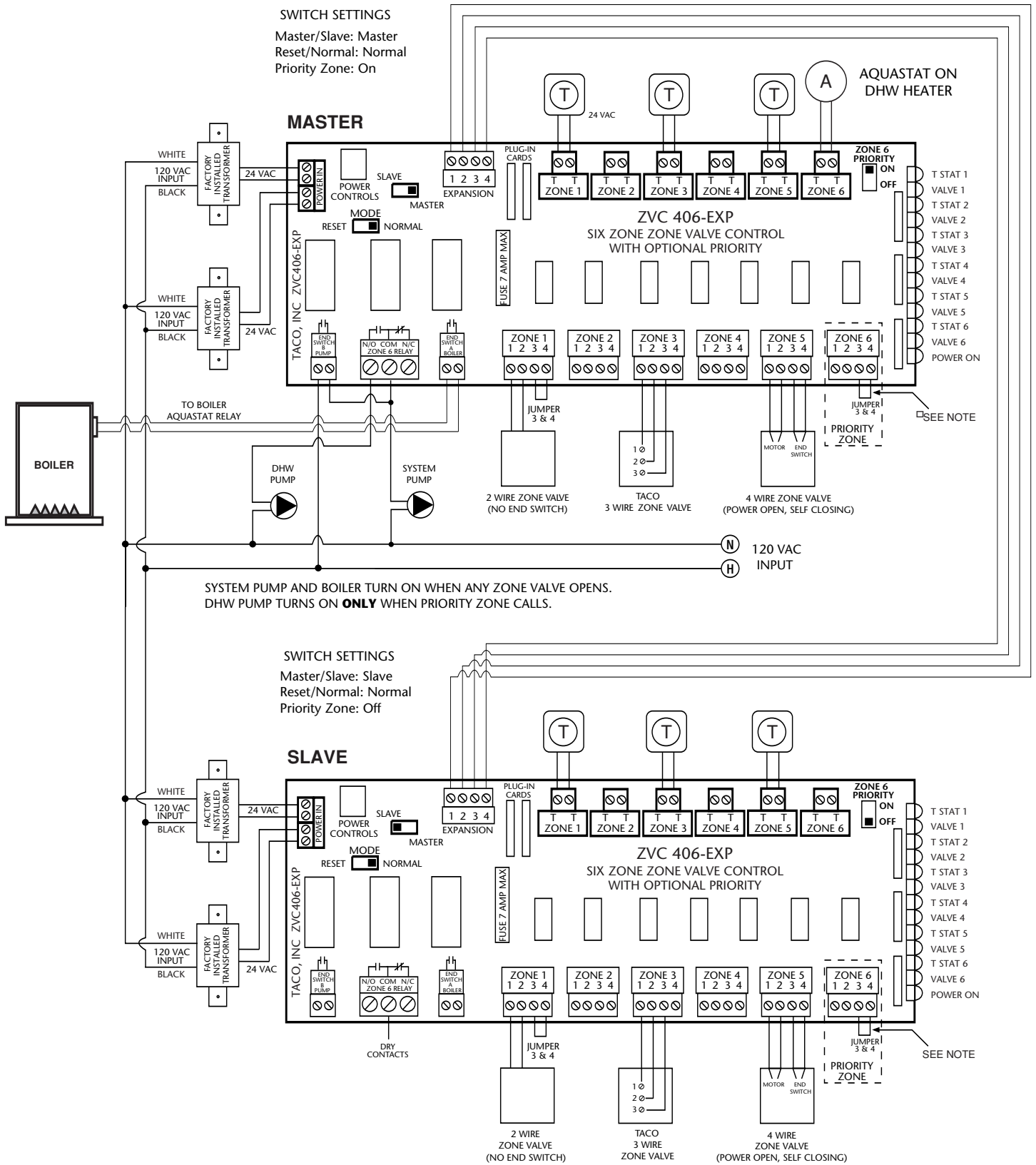
2 EXP Zone Valve Controls Connected Together with DHW Pump

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.



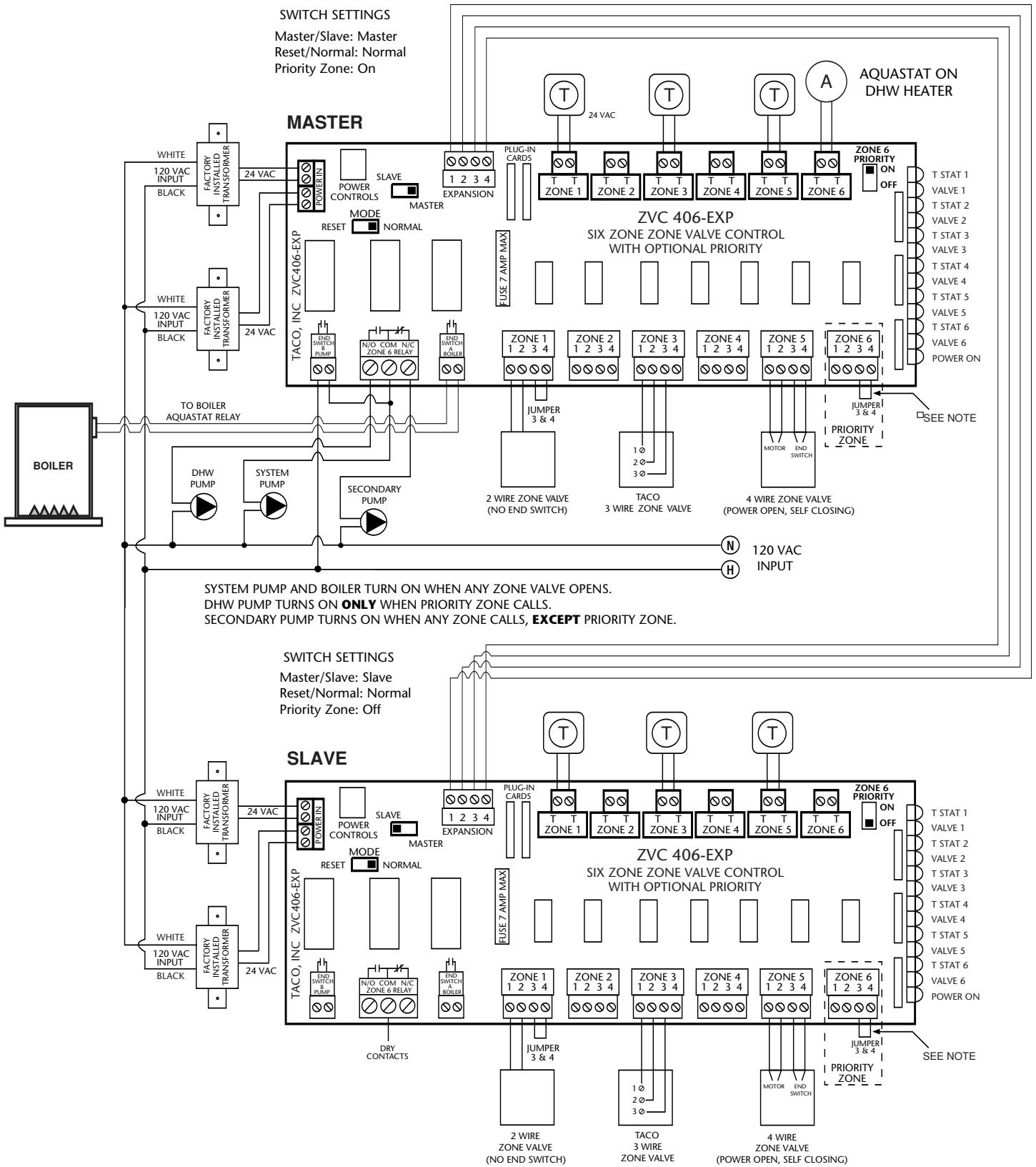
2 EXP Zone Valve Controls Connected Together with System and DHW Pumps

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

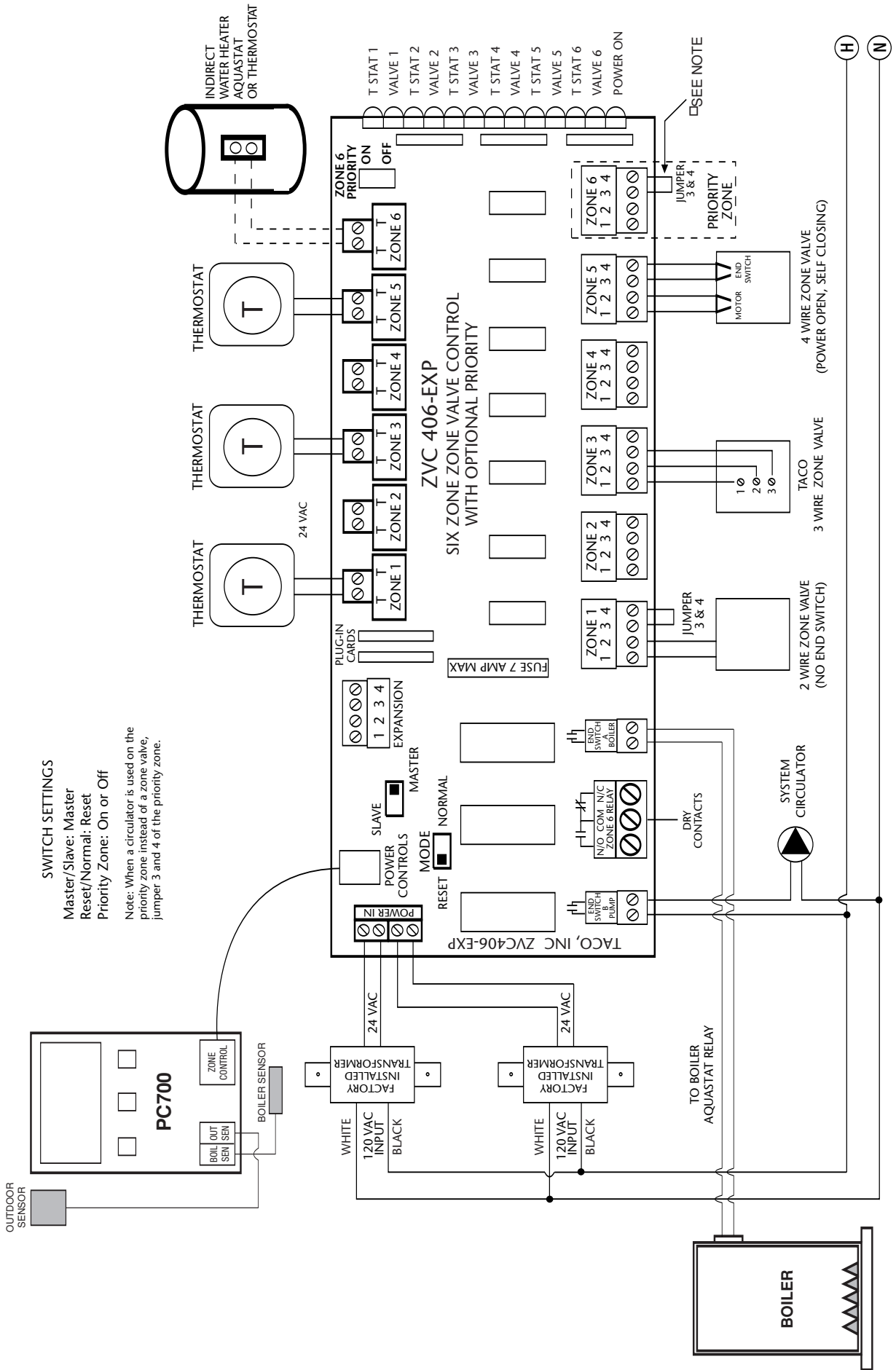


2 EXP Zone Valve Controls Connected Together with System, DHW and Secondary Pumps

Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

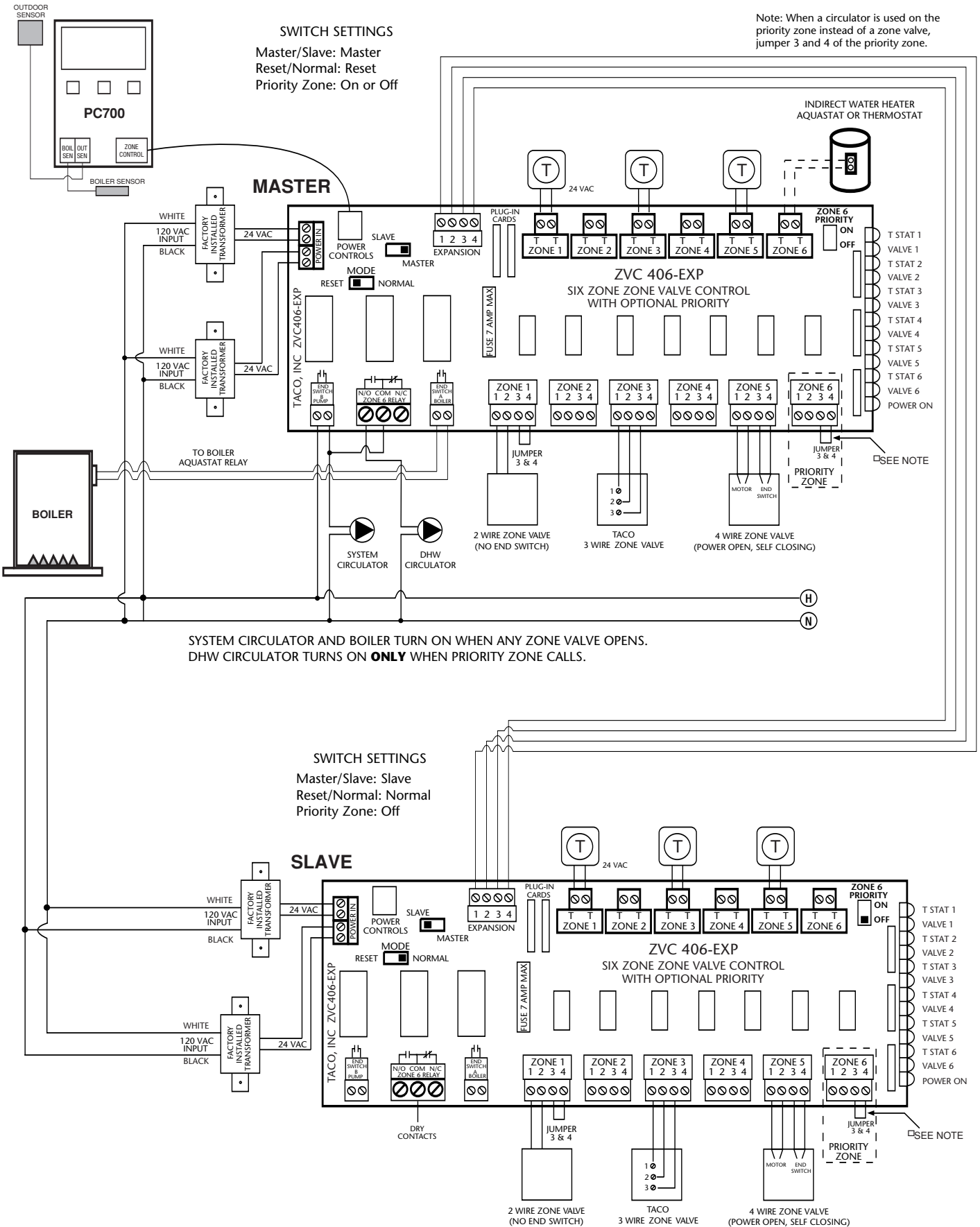


PC700 Boiler Reset Control Connected To EXP Zone Valve Control



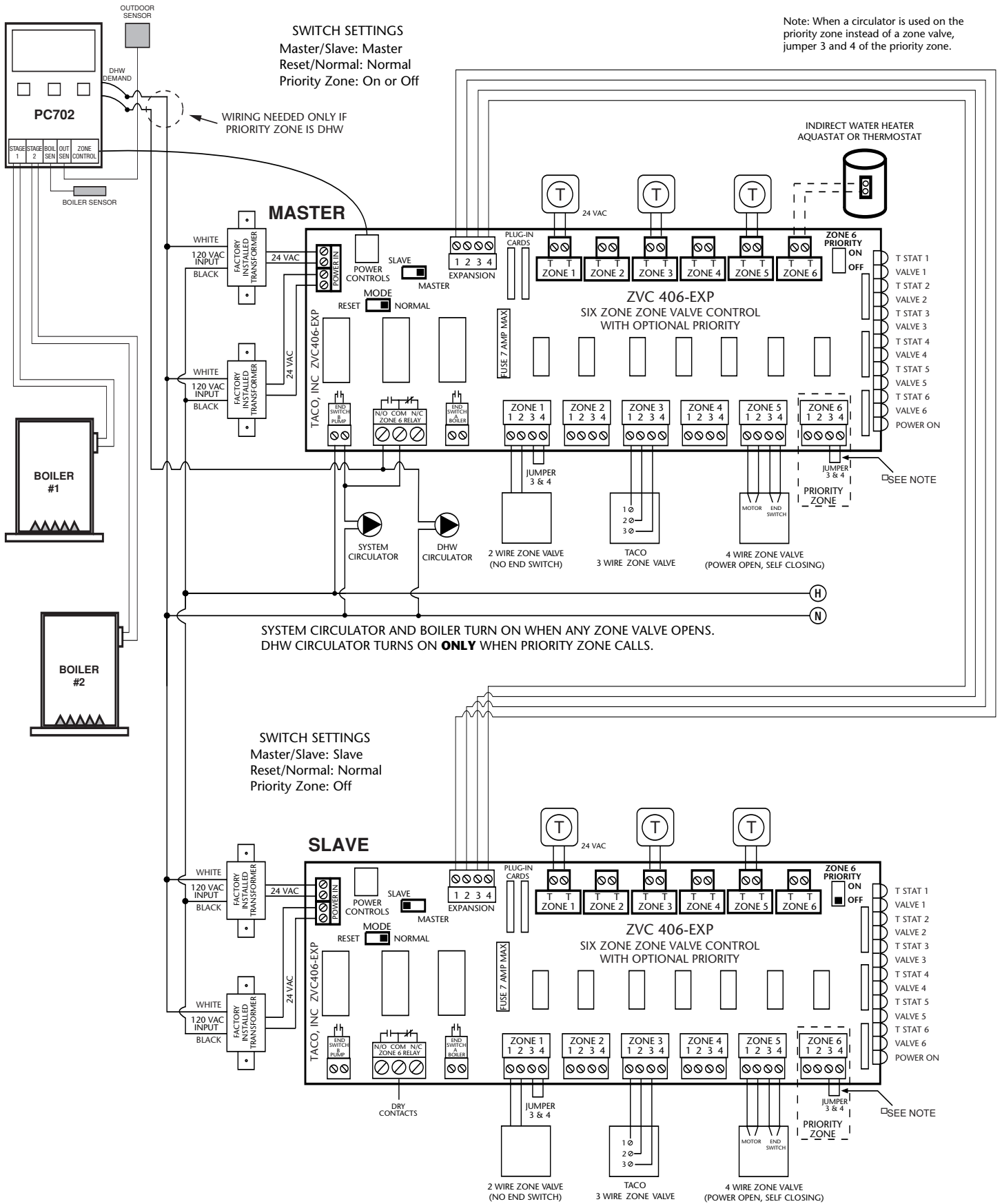
SYSTEM CIRCULATOR AND BOILER TURN ON WHEN ANY ZONE VALVE OPENS.

PC700 Boiler Reset Control Connected To 2 EXP Zone Valve Controls

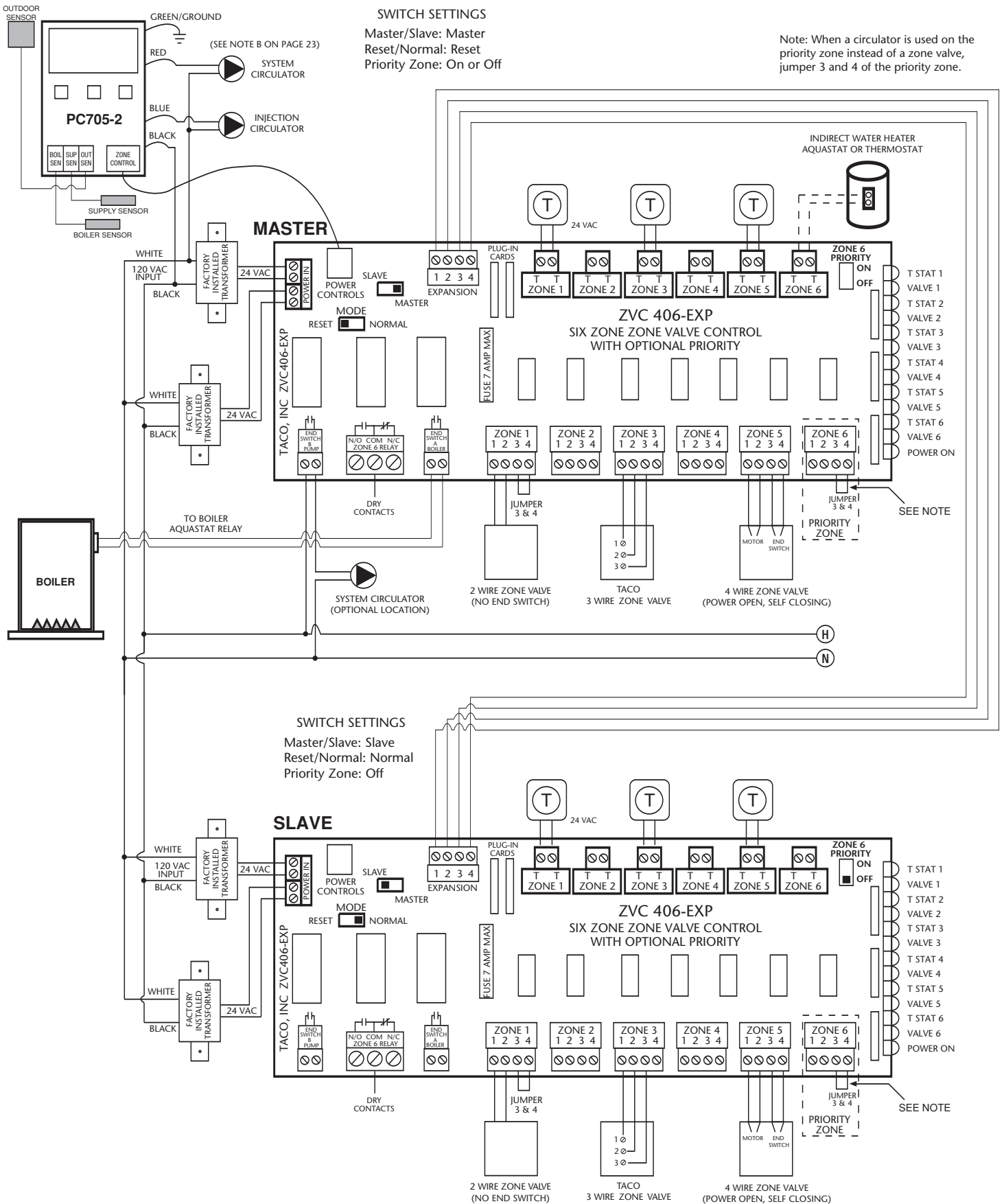


PC702 2-Stage Boiler Reset Control Connected To 2 EXP Zone Valve Controls

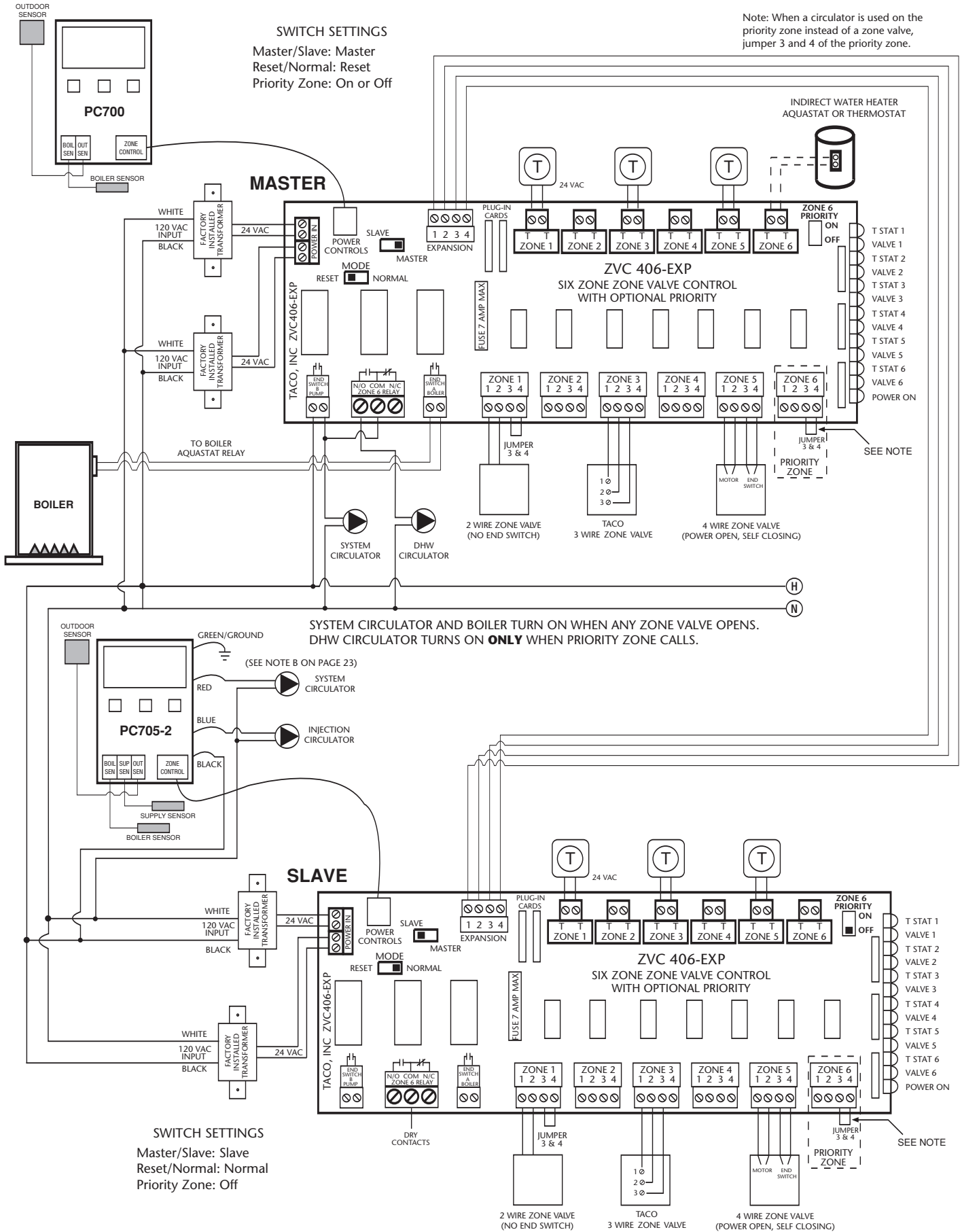
Note: When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.



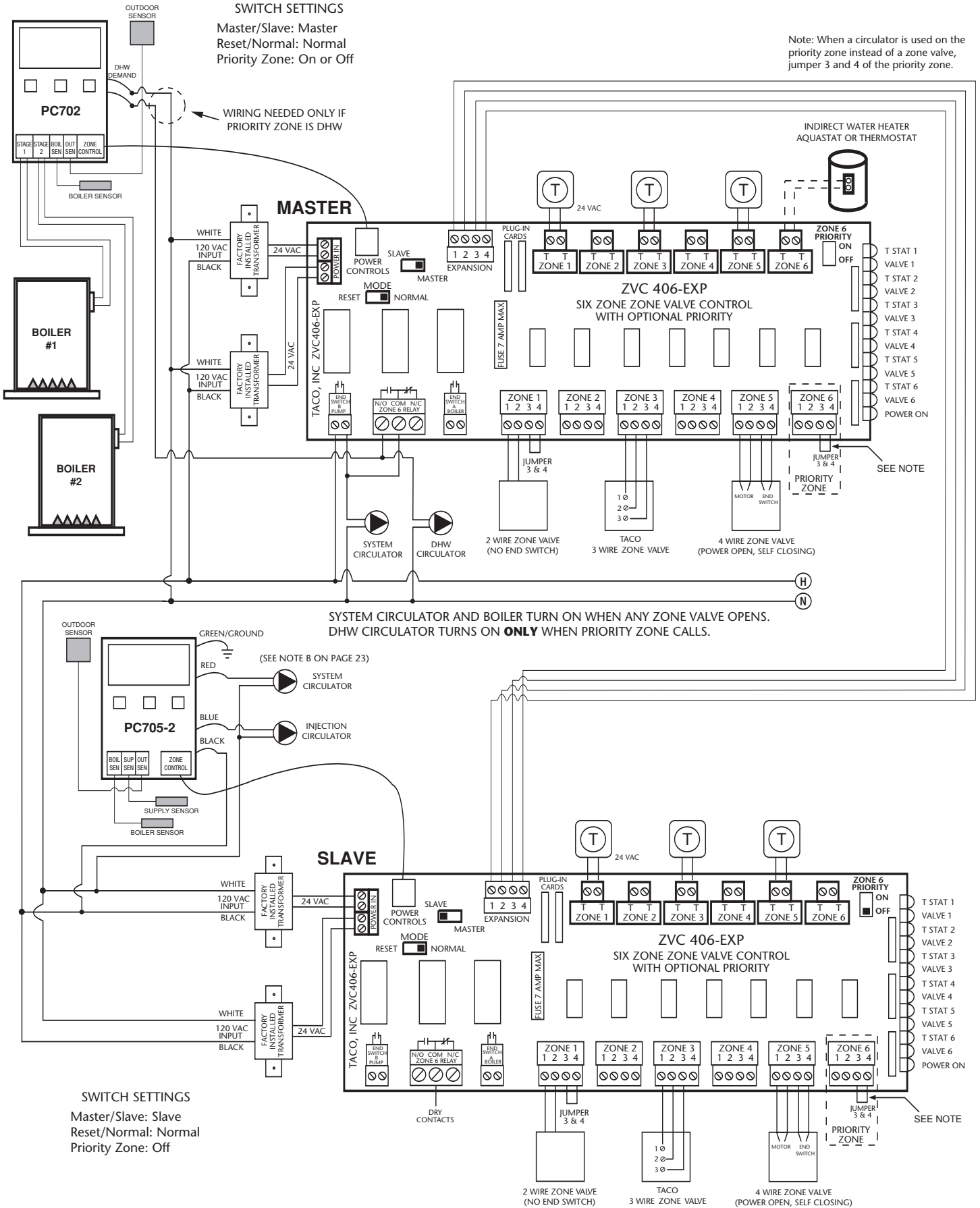
PC705 Variable Speed Pump Injection Control Connected To 2 EXP Zone Valve Controls



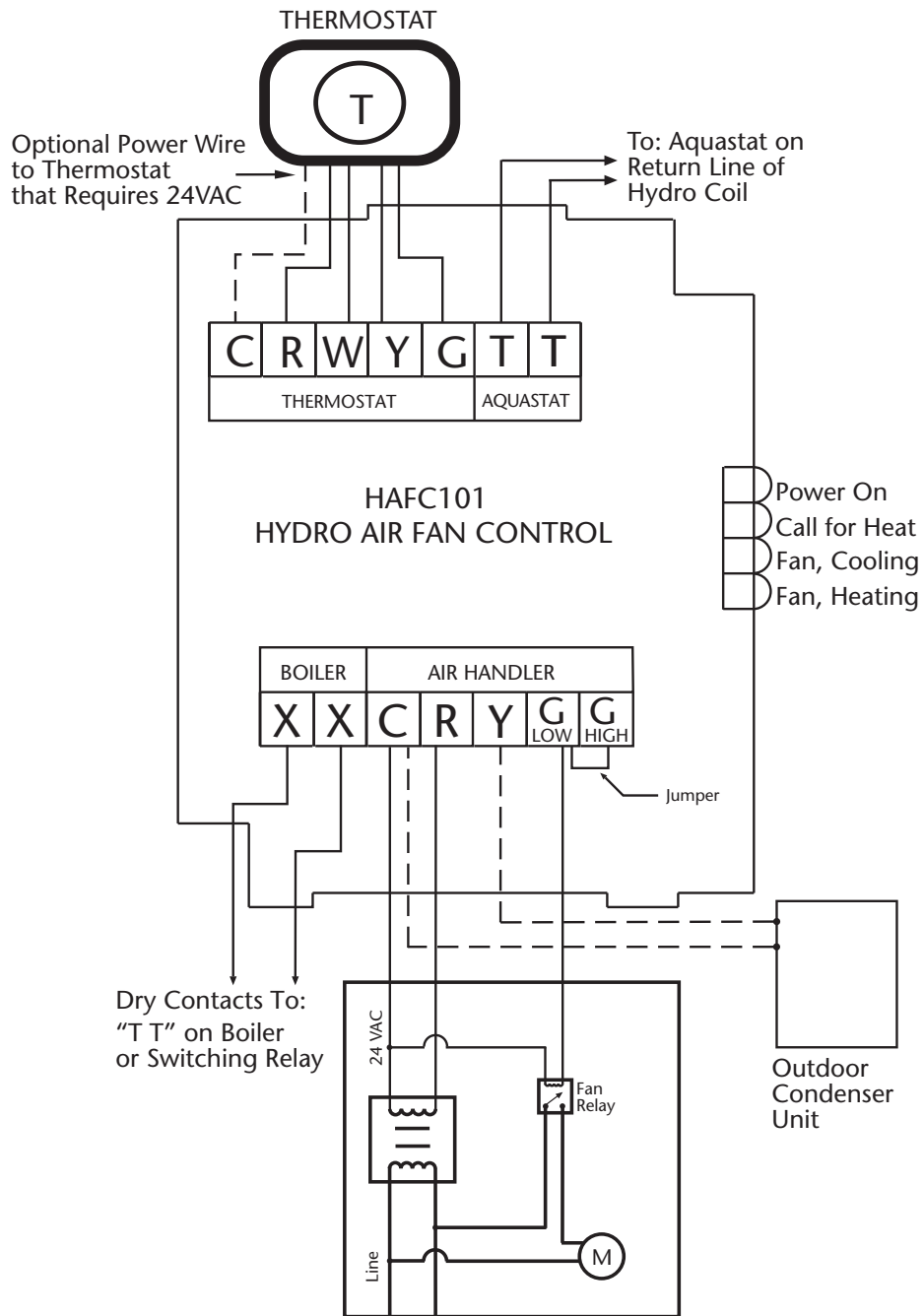
PC700 and PC705 Connected To 2 EXP Zone Valve Controls



PC702 and PC705 Connected To 2 EXP Zone Valve Controls

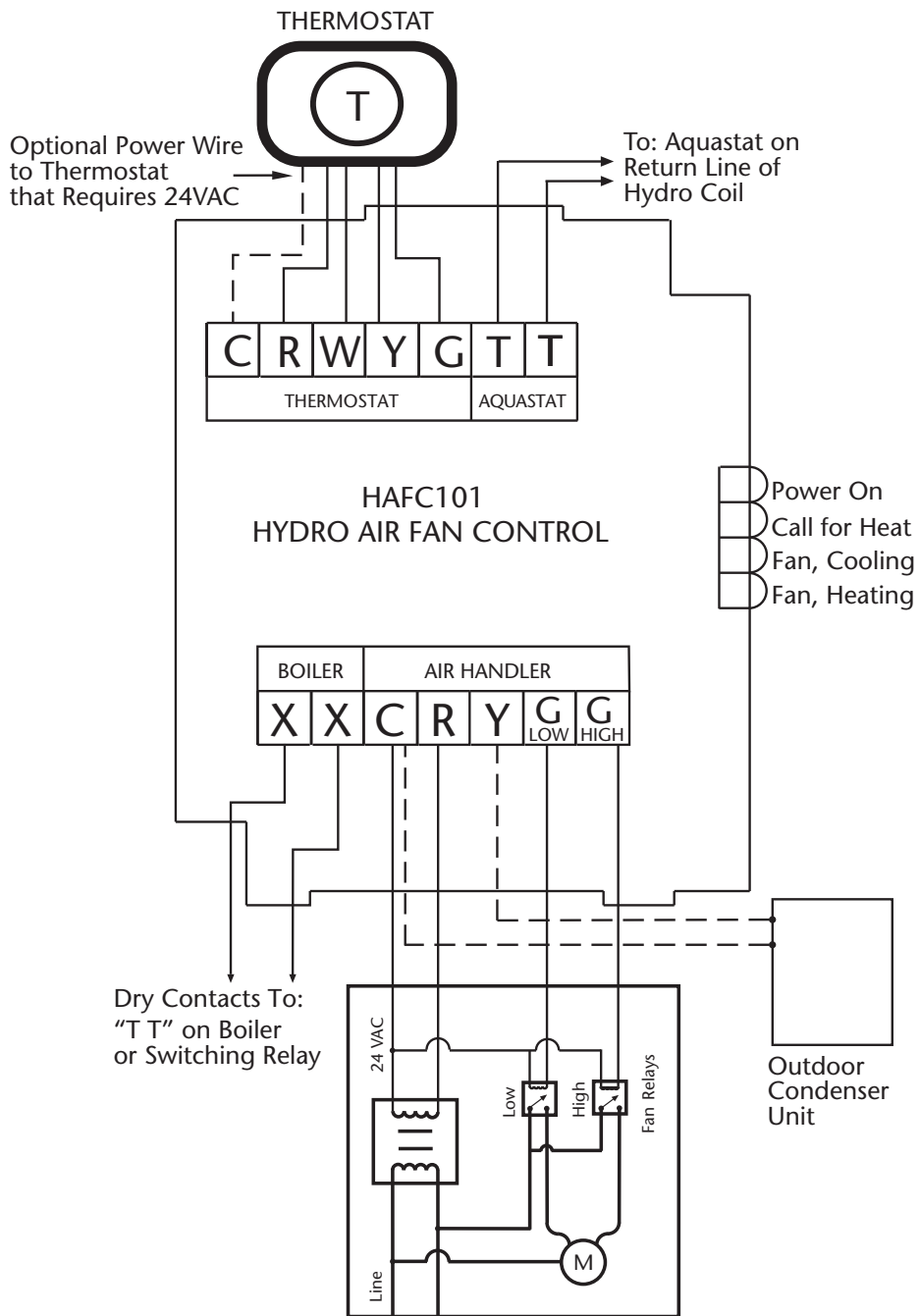


HAFC101 with 1 Speed Air Handler



HAFC 101 WITH 1 SPEED AIR HANDLER
 (Both HFC 101 and HAFC 201 are capable of 1 and 2 speed applications.)

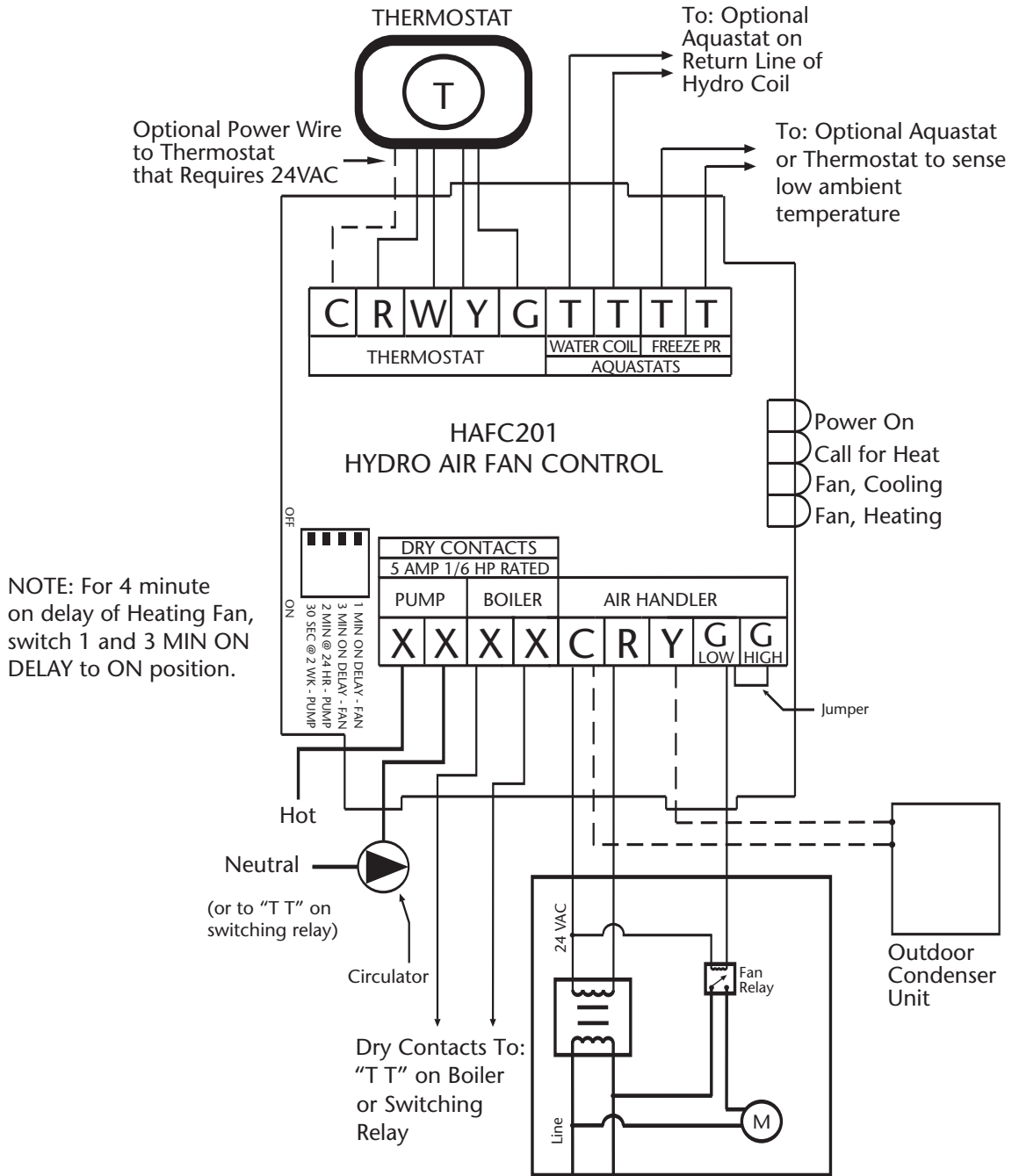
H AFC101 with 2 Speed Air Handler



H AFC 101 WITH 2 SPEED AIR HANDLER

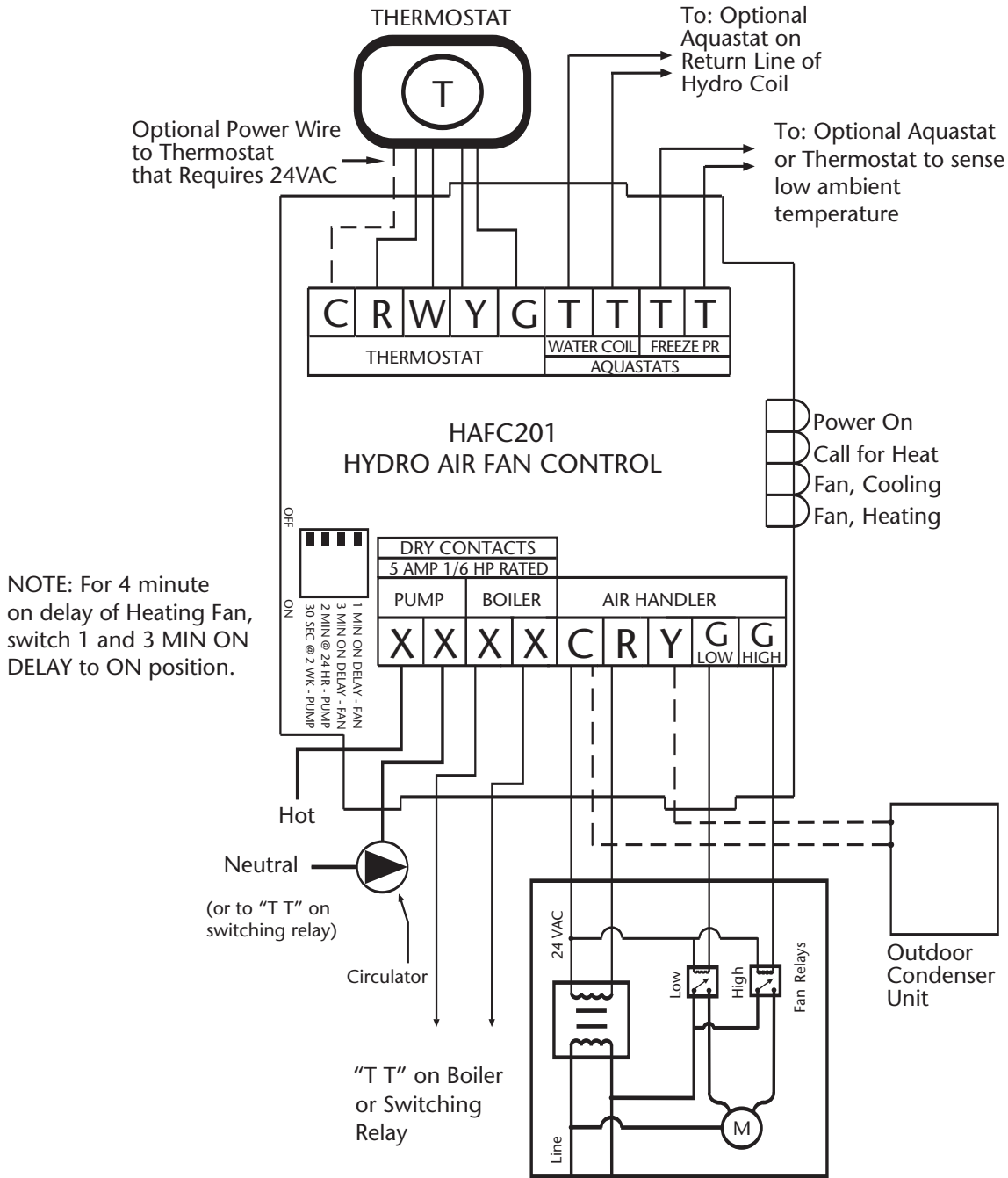
(Both HFC 101 and H AFC 201 are capable of 1 and 2 speed applications.)

HAFC201 with 1 Speed Air Handler



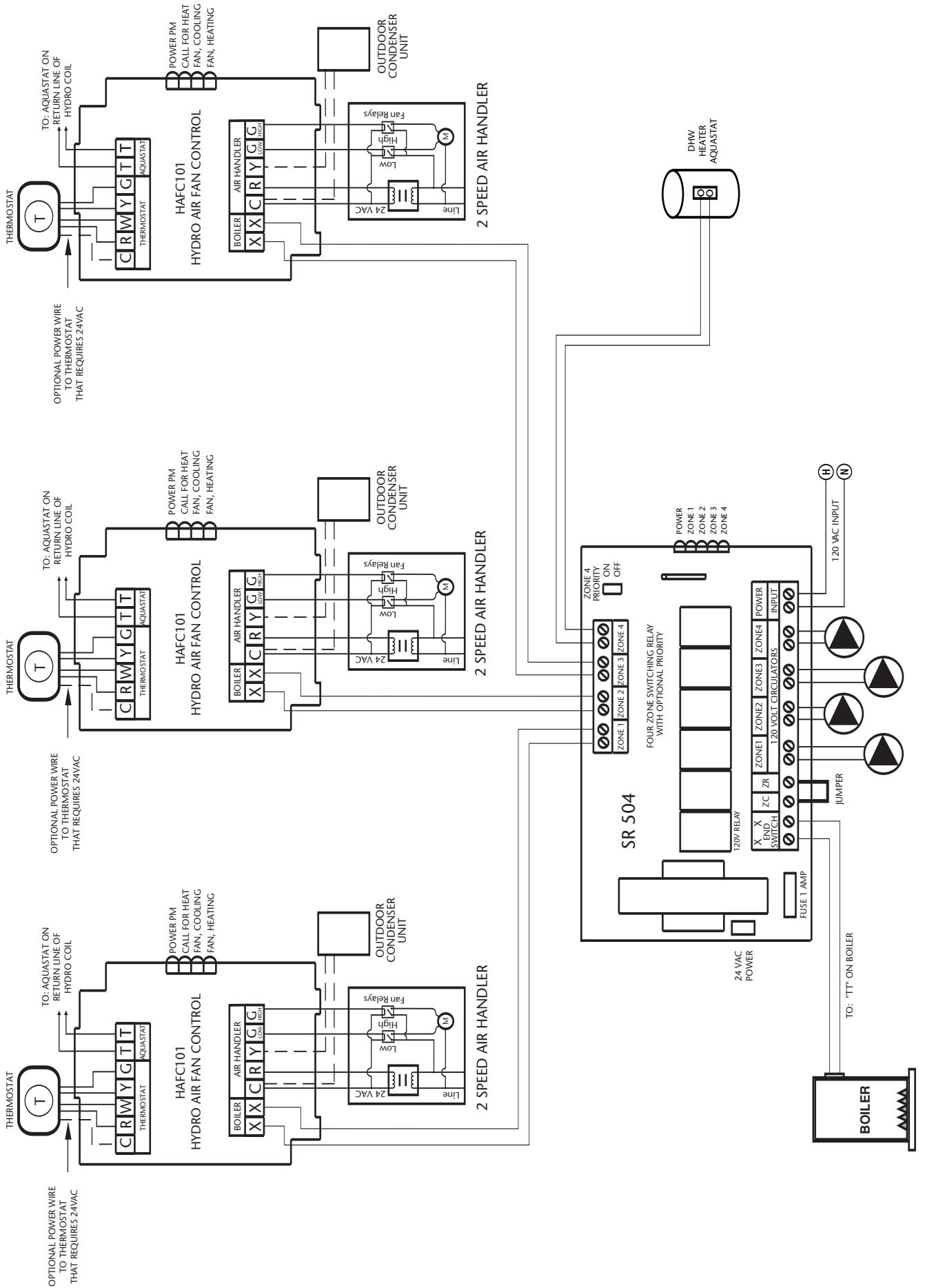
HAFC 201 WITH 1 SPEED AIR HANDLER
(Both HFC 101 and HAFC 201 are capable of 1 and 2 speed applications.)

H AFC201 with 2 Speed Air Handler

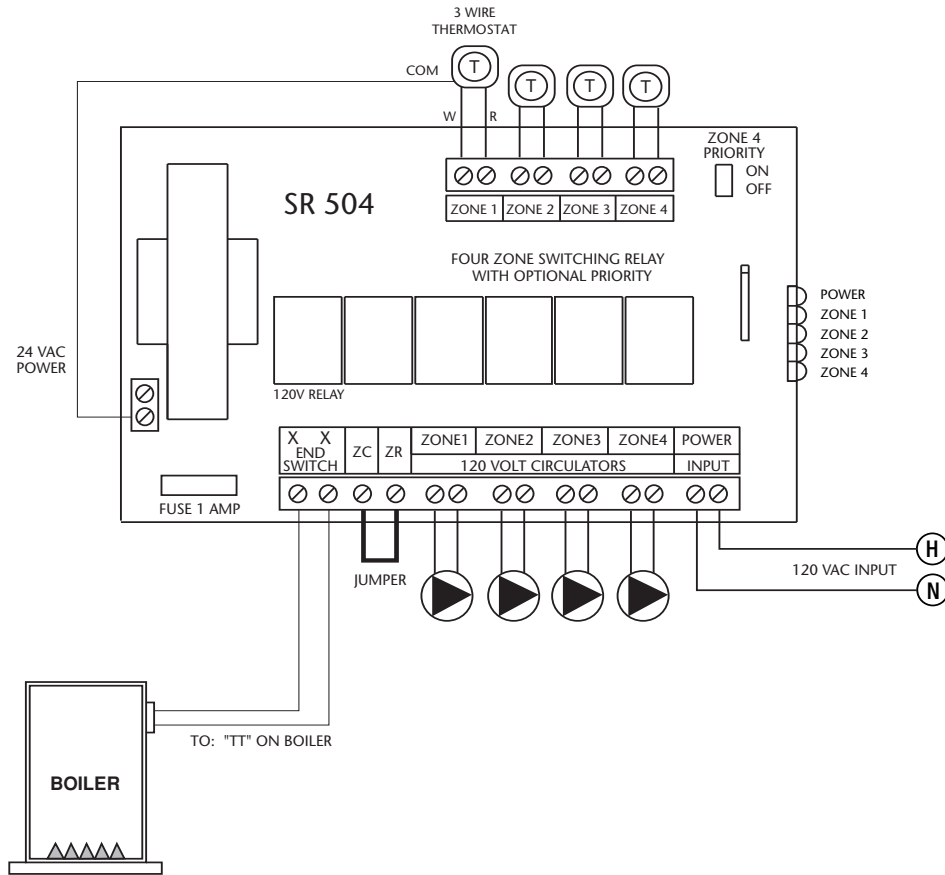


H AFC 201 WITH 2 SPEED AIR HANDLER
 (Both HFC 101 and H AFC 201 are capable of 1 and 2 speed applications.)

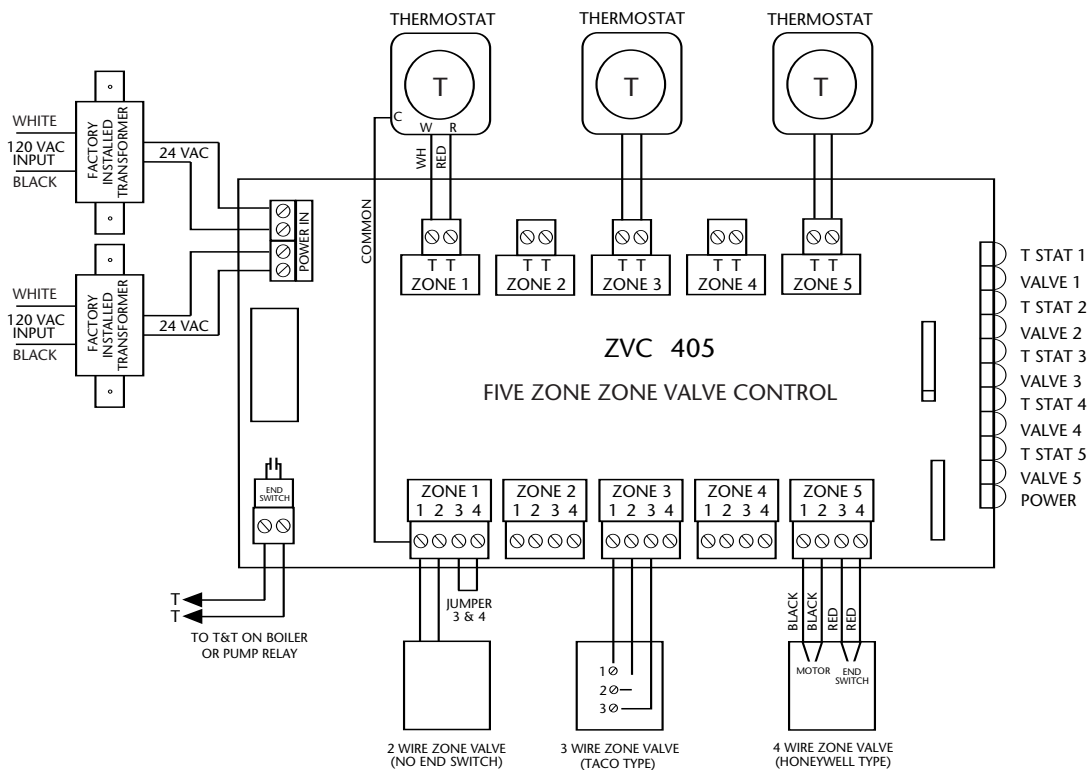
Multiple HAFc's and Switching Relay



3 Wire Thermostat Connected to TACO Switching Relay

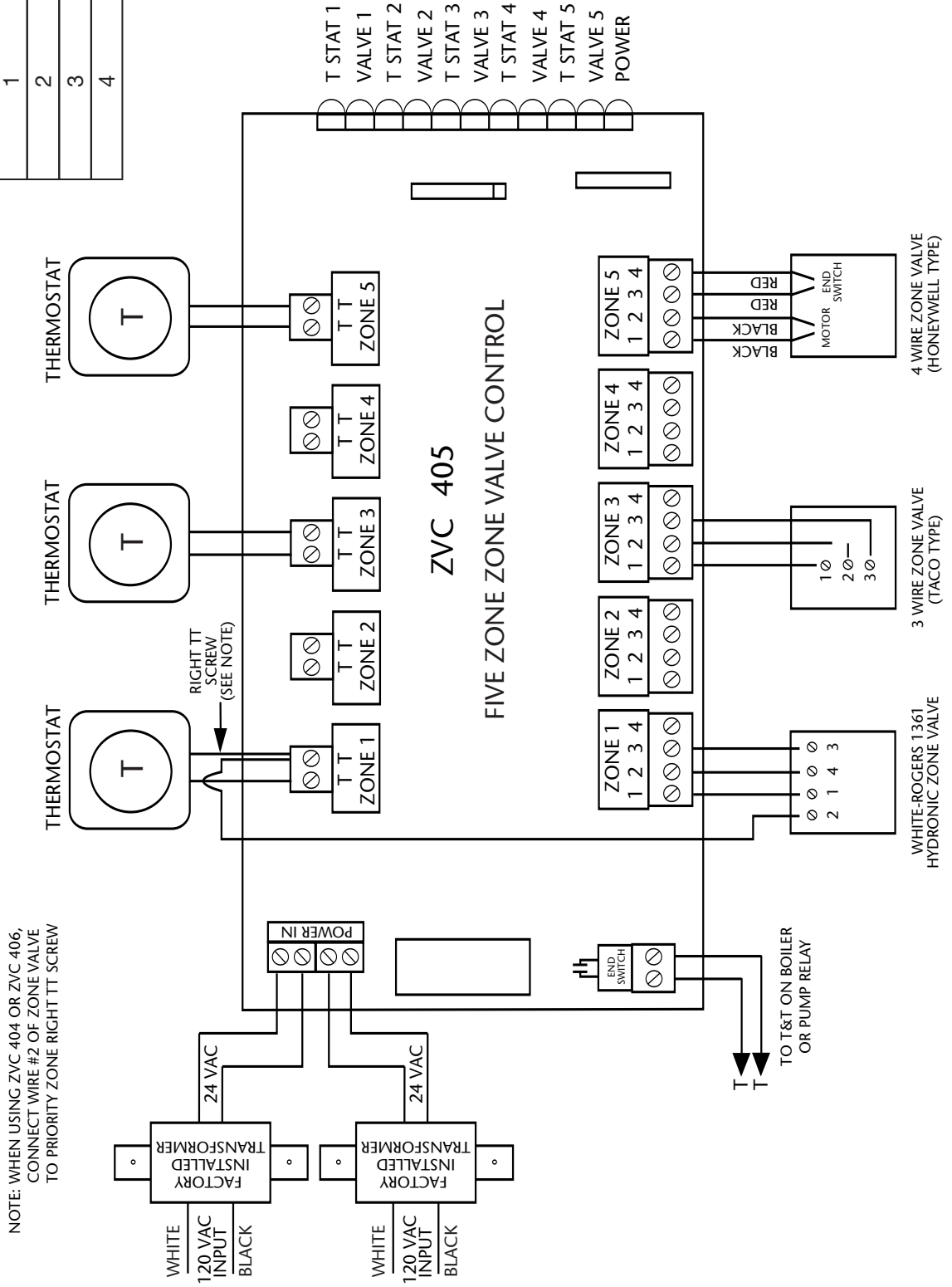


3 Wire Thermostat Connected to TACO Zone Valve Control



White-Rogers 1361 Hydronic Zone Valve with TACO Zone Valve Control

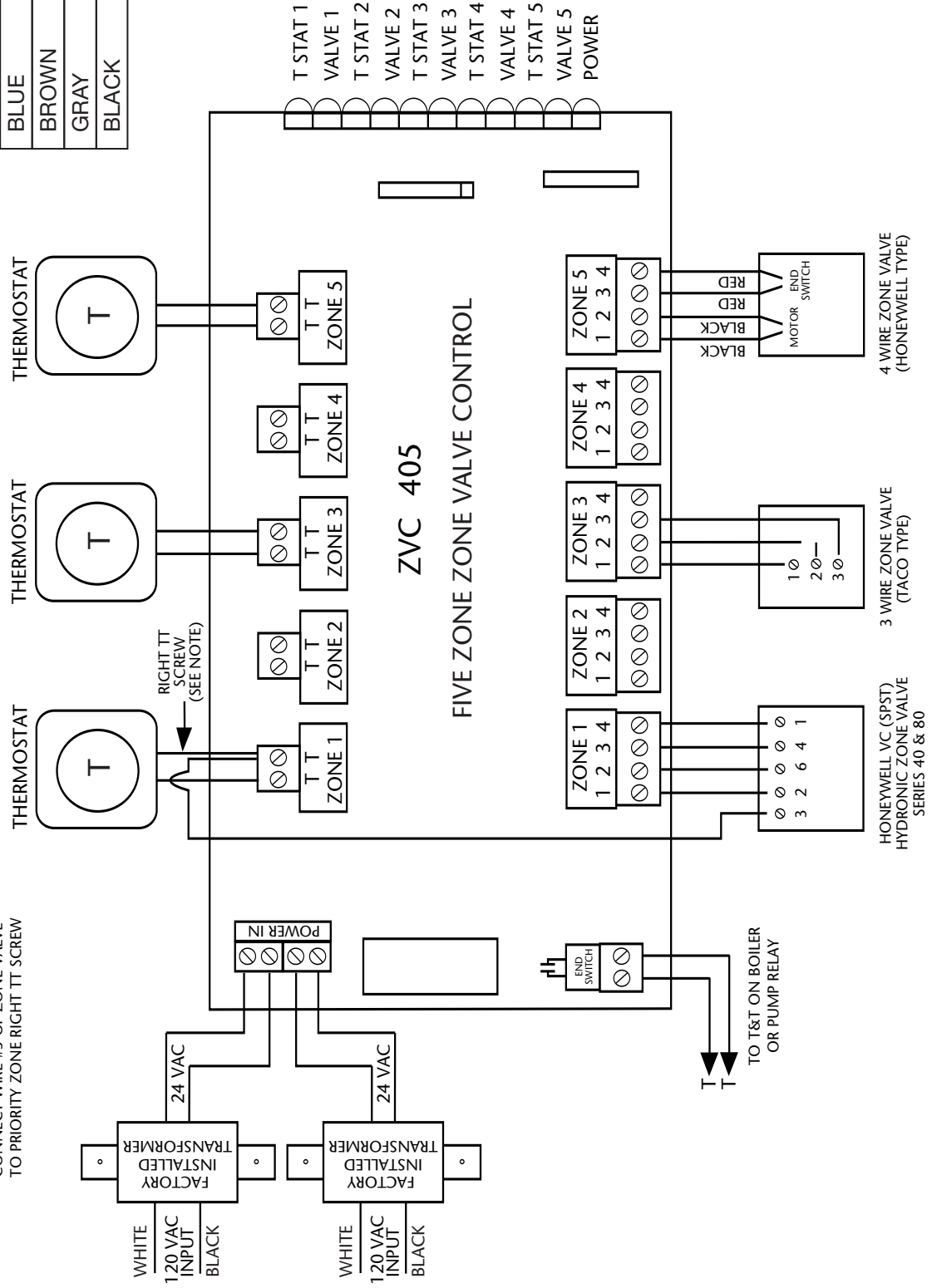
TERMINAL ASSIGNMENT	
ZONE VALVE	CONTROL
1	1
2	TT (Rt)
3	3
4	2



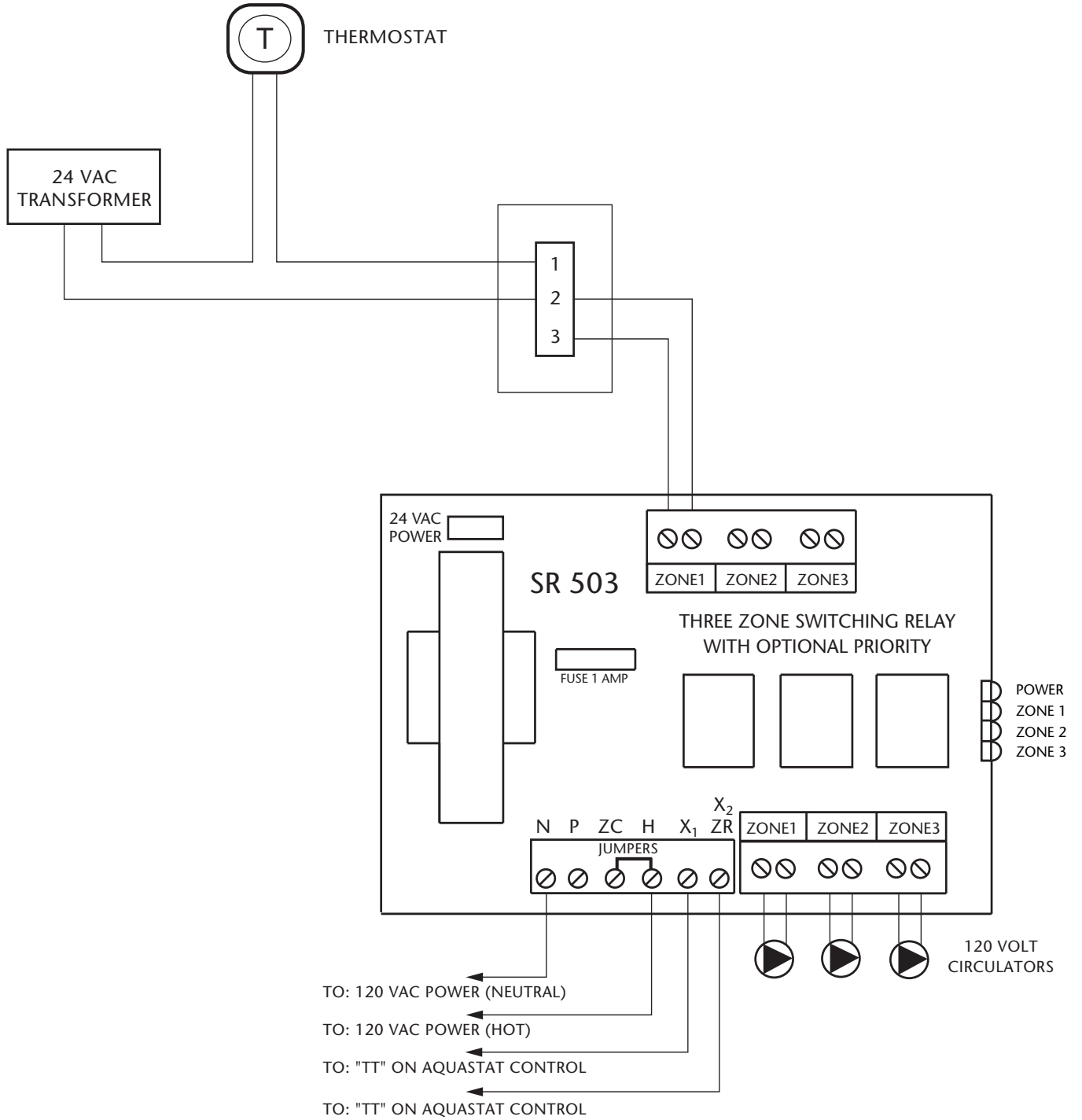
Honeywell VC 40 & 80 (spdt) Hydronic Zone Valve with TACO Zone Valve Control

TERMINAL ASSIGNMENT	
ZONE VALVE	CONTROL
ORANGE	1 3
BLUE	2 1
BROWN	3 TT (Rt)
GRAY	4 4
BLACK	6 2

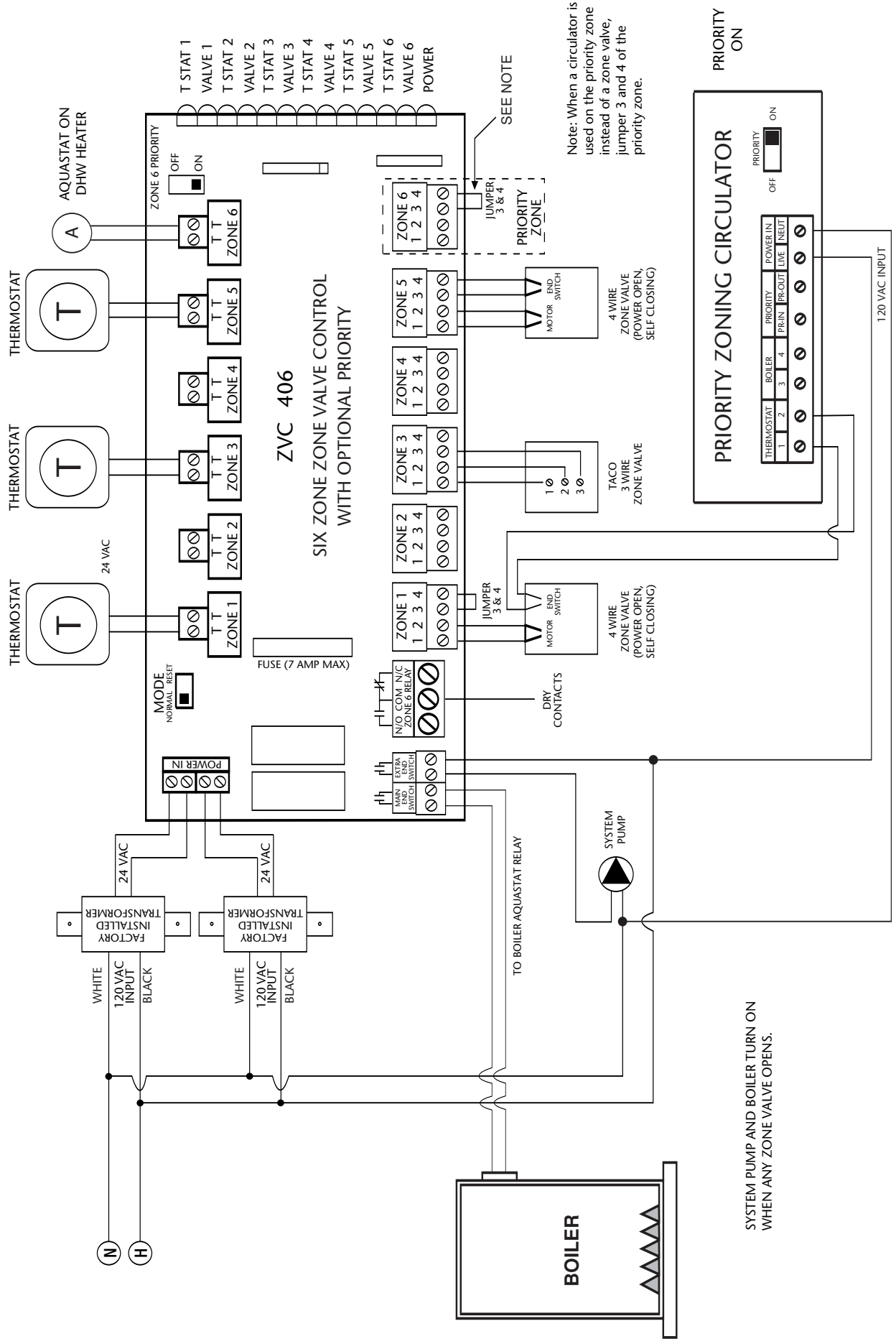
NOTE: WHEN USING ZVC 404 OR ZVC 406, CONNECT WIRE #3 OF ZONE VALVE TO PRIORITY ZONE RIGHT TT SCREW



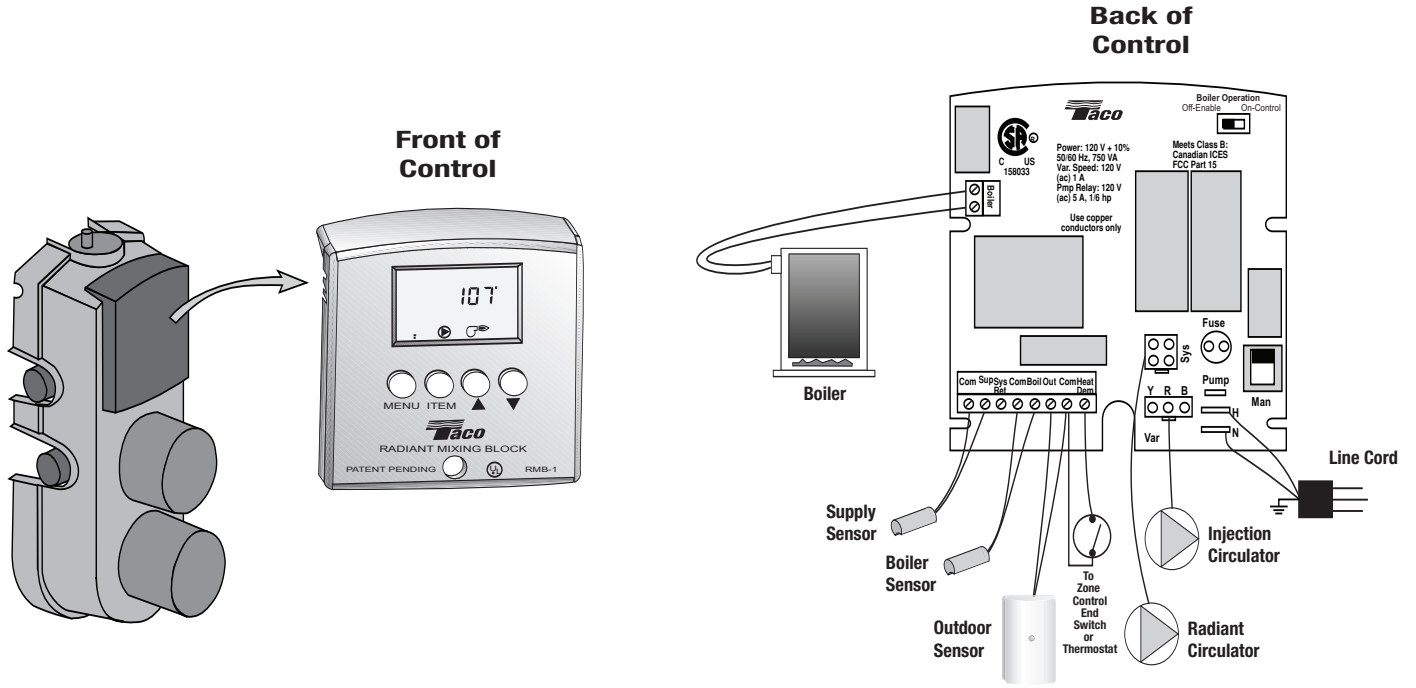
570 Zone Valve to Switching Relay



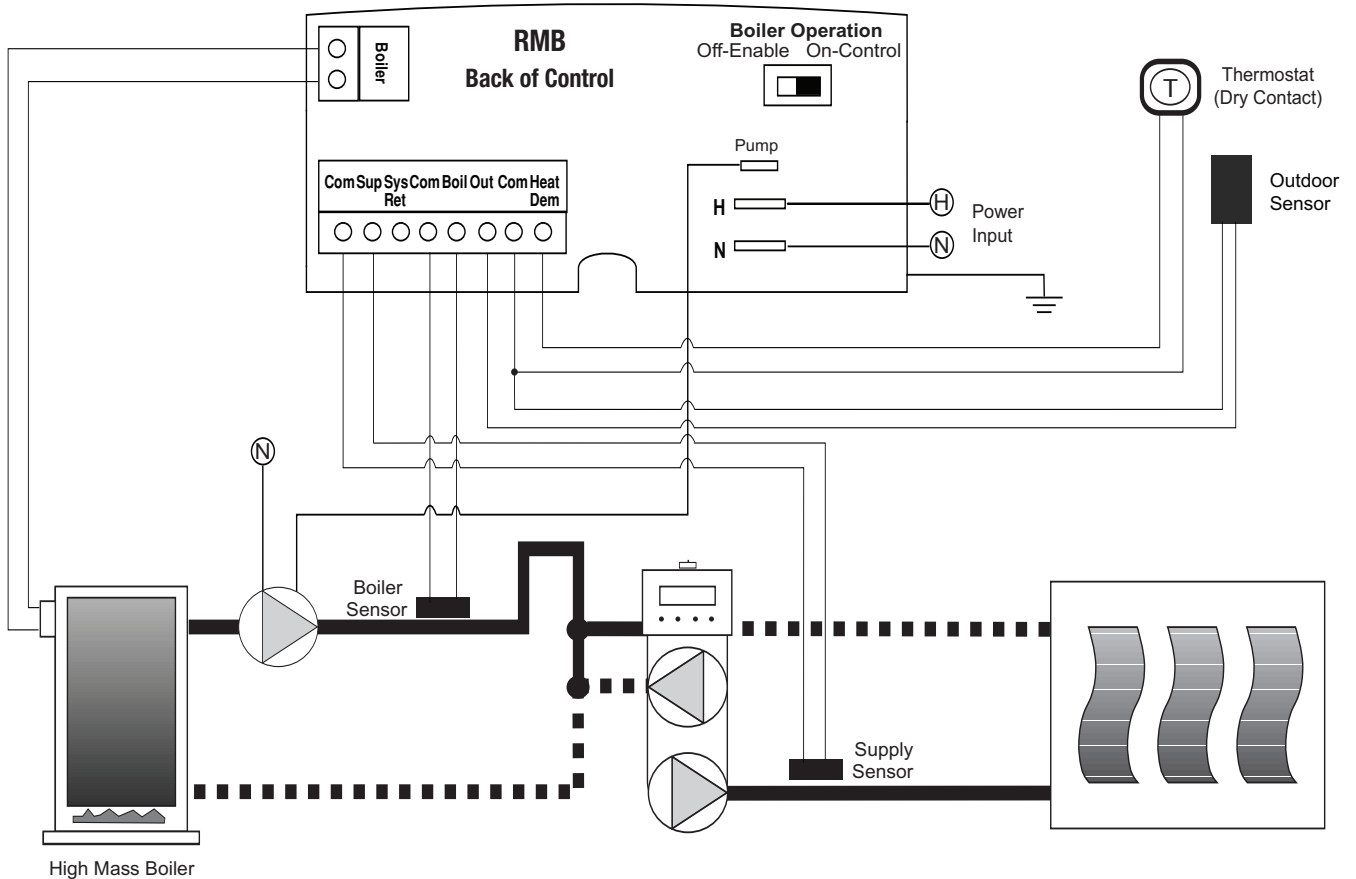
Zone Valve Control with 1 Low Temperature Zone Using Priority Zoning Circulator



Radiant Mixing Block (RMB)

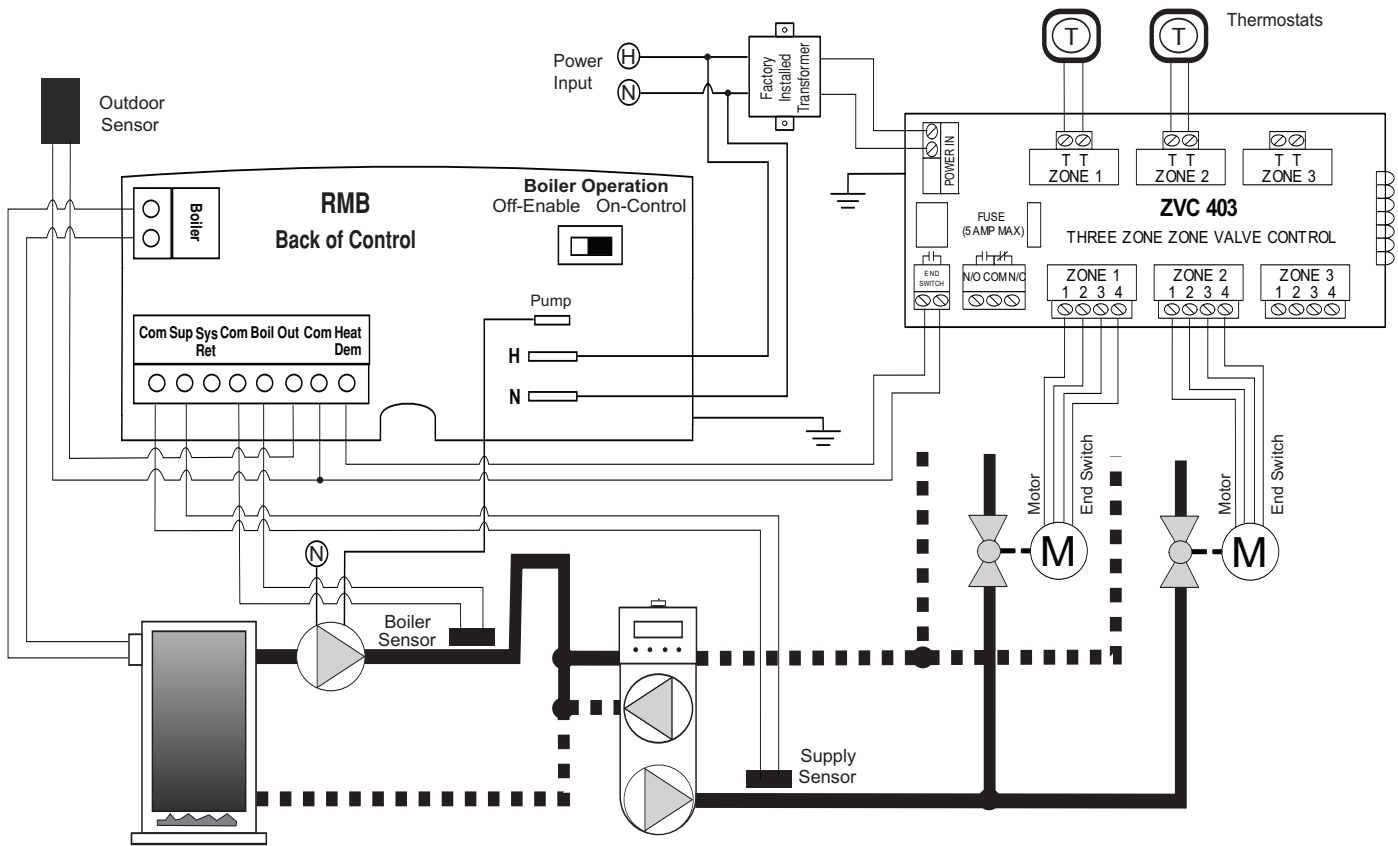


Radiant Mixing Block, Single Zone

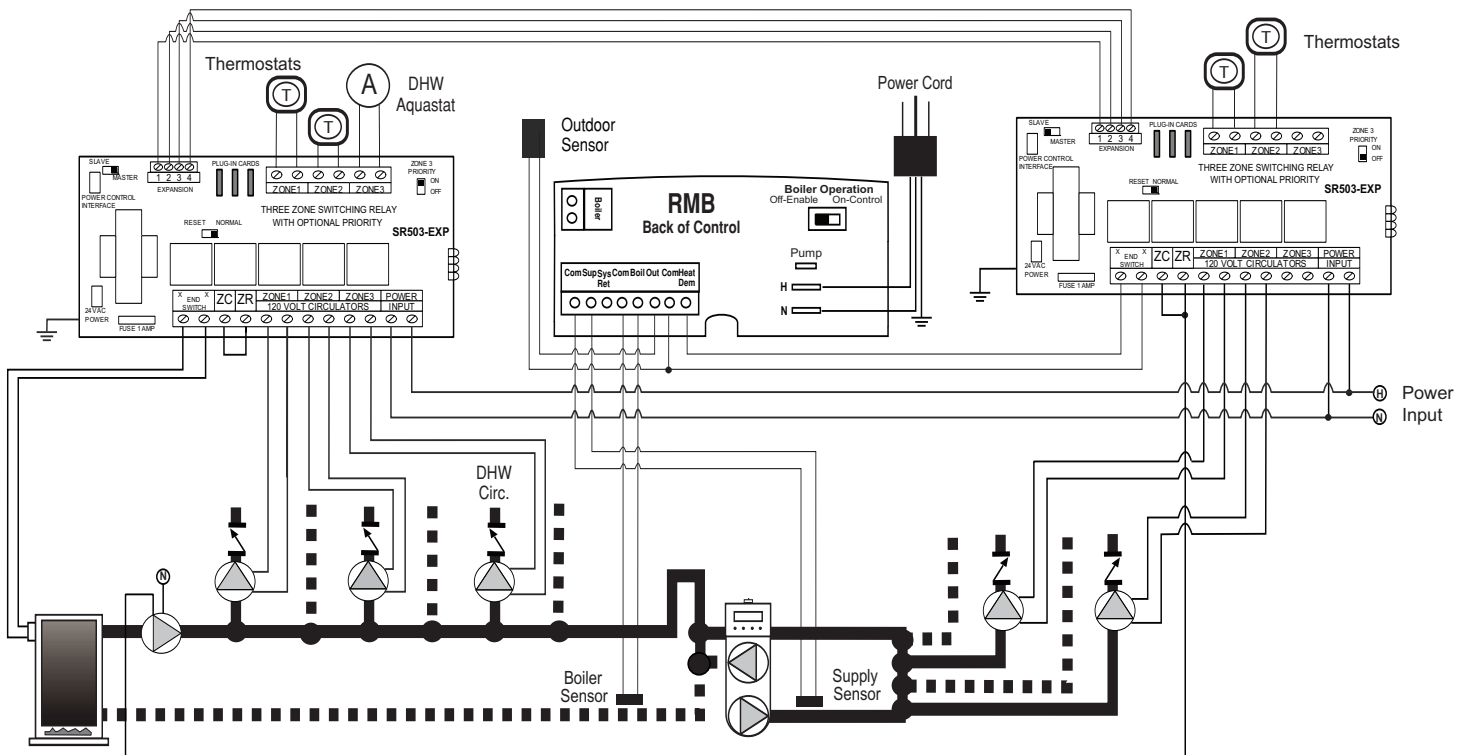


FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard

Radiant Mixing Block Connected to Zone Valve Control with System Pump Wired off the RMB

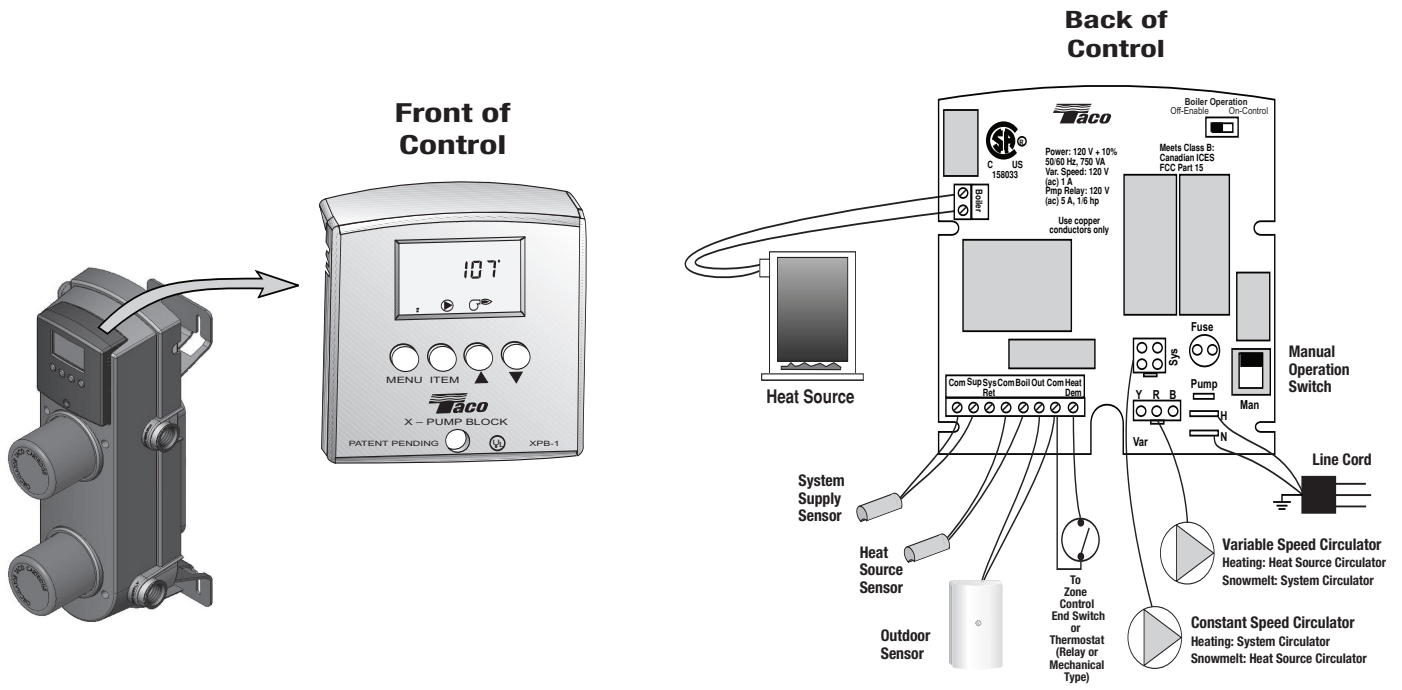


Radiant Mixing Block Connected to 2 EXP Switching Relays with DHW Pump

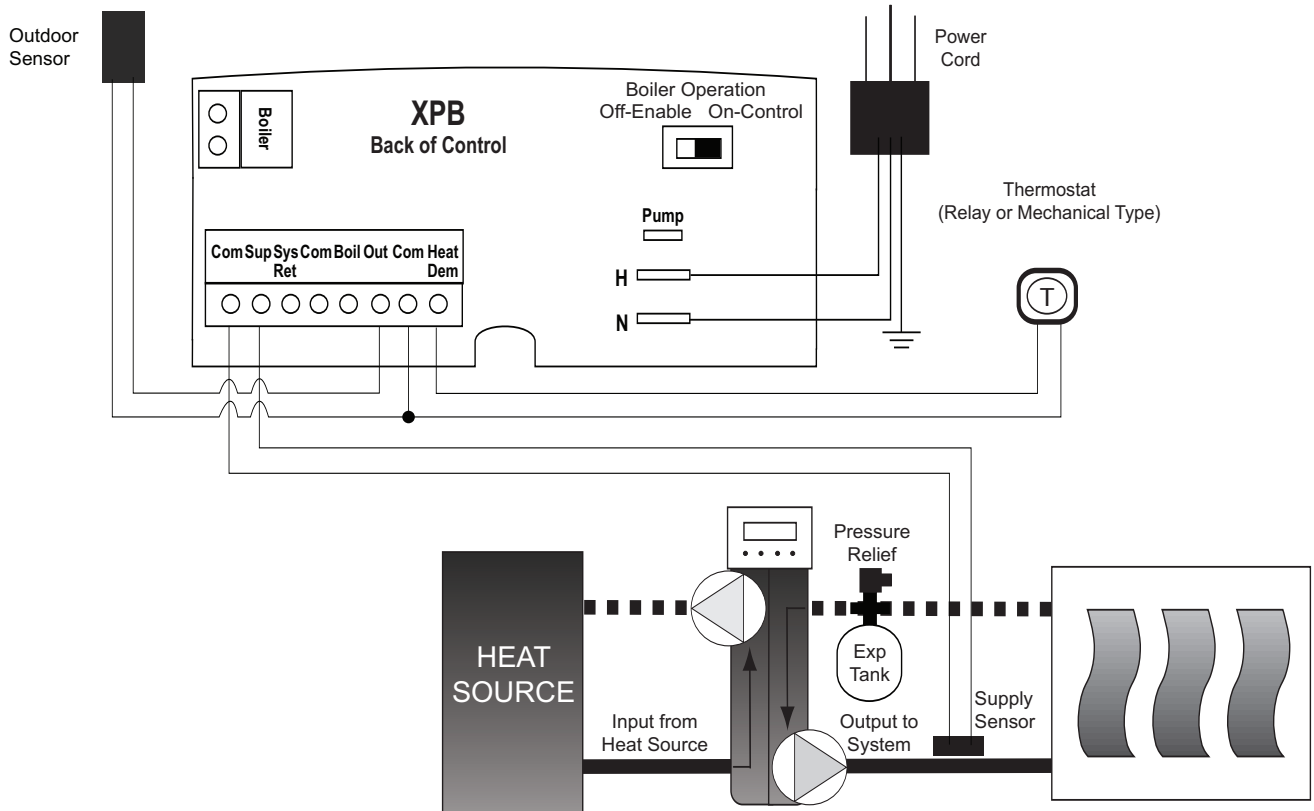


FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard

X - Pump Block (XPB)

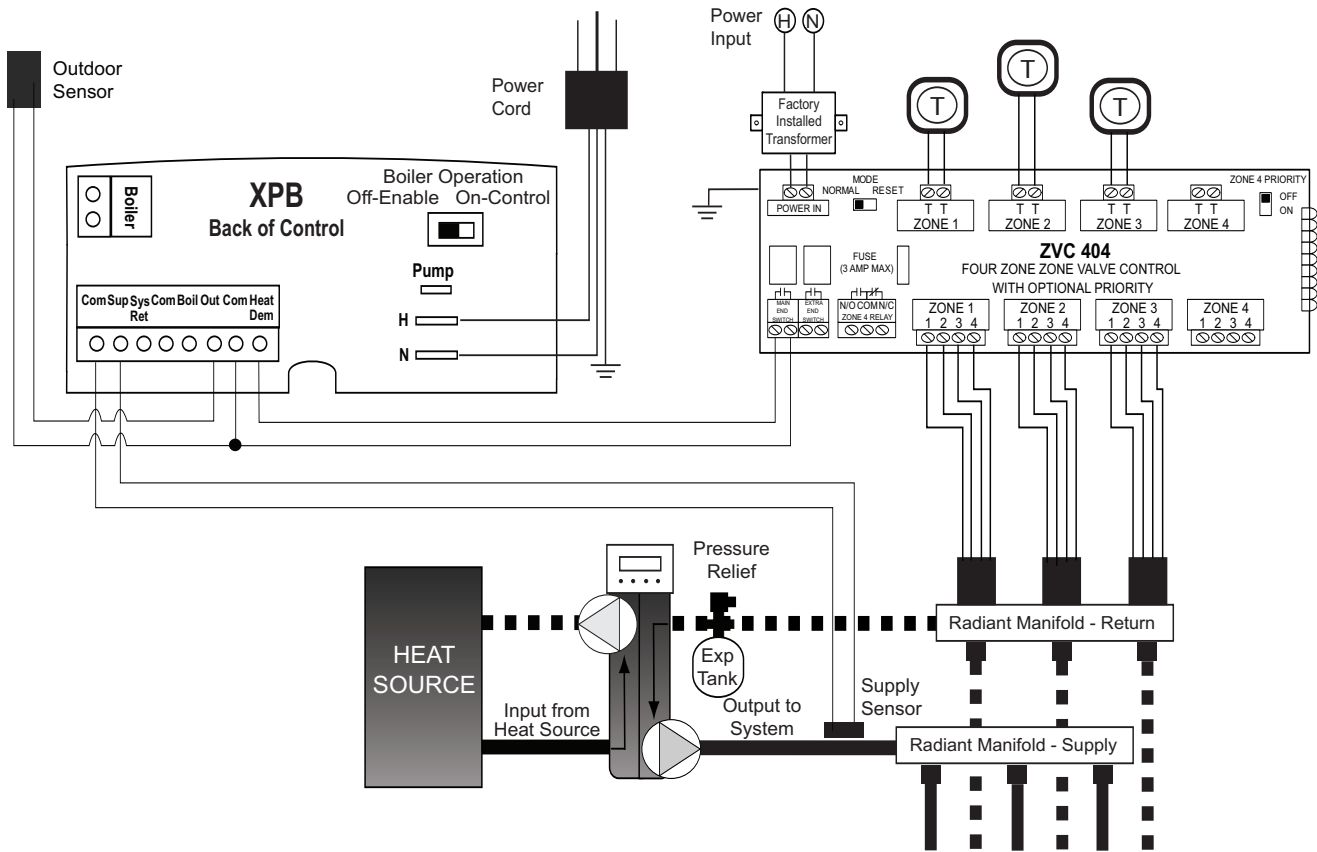


X - Pump Block, Single Zone

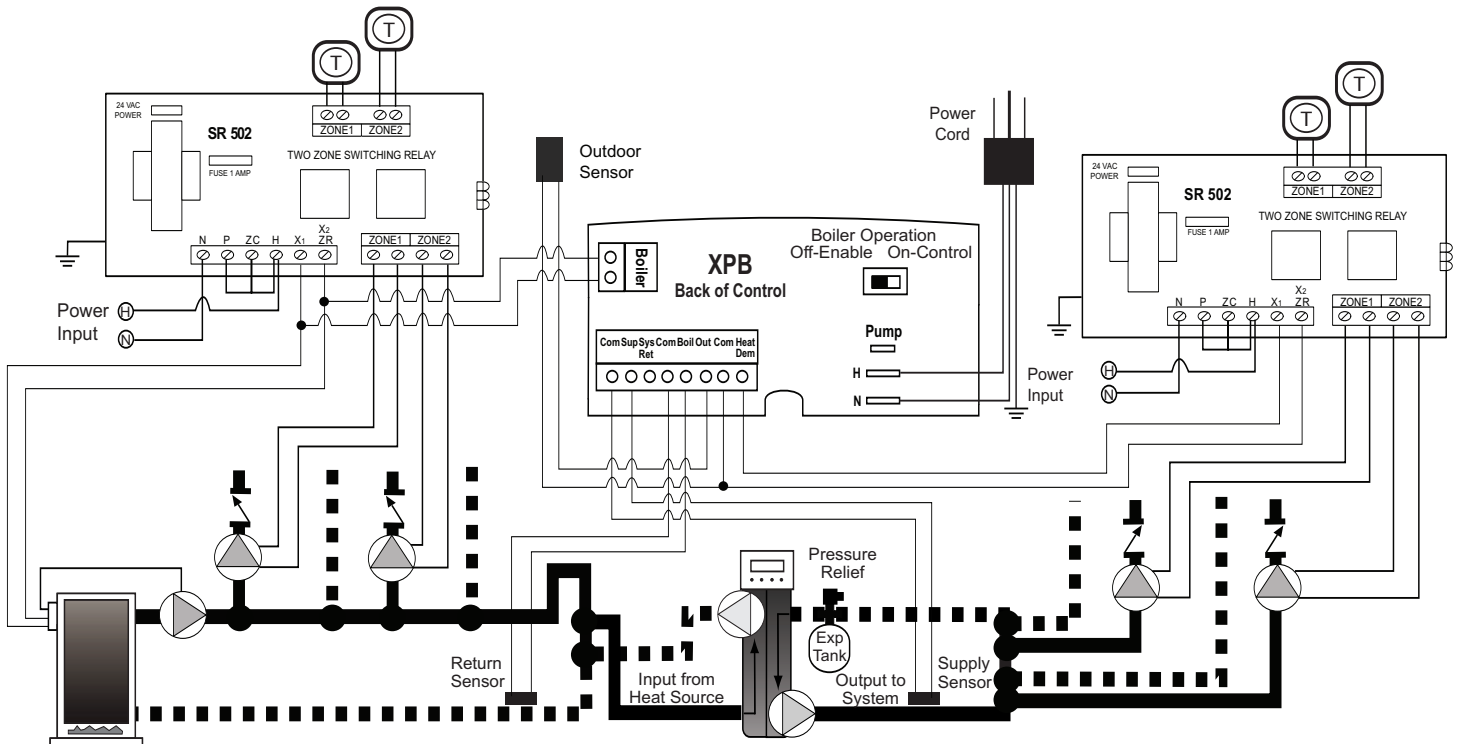


FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard

X - Pump Block Connected to Zone Valve Control

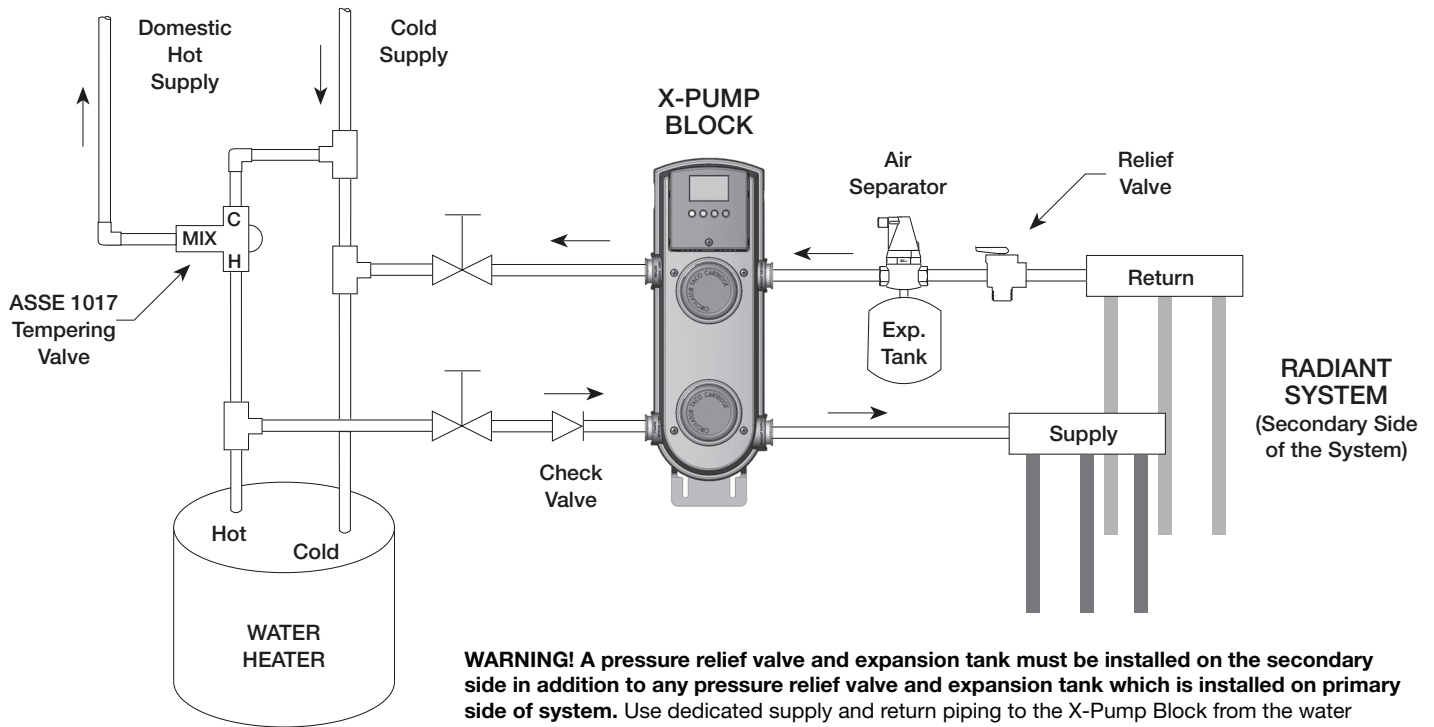


X - Pump Block Connected to 2 SR502/503 Switching Relays

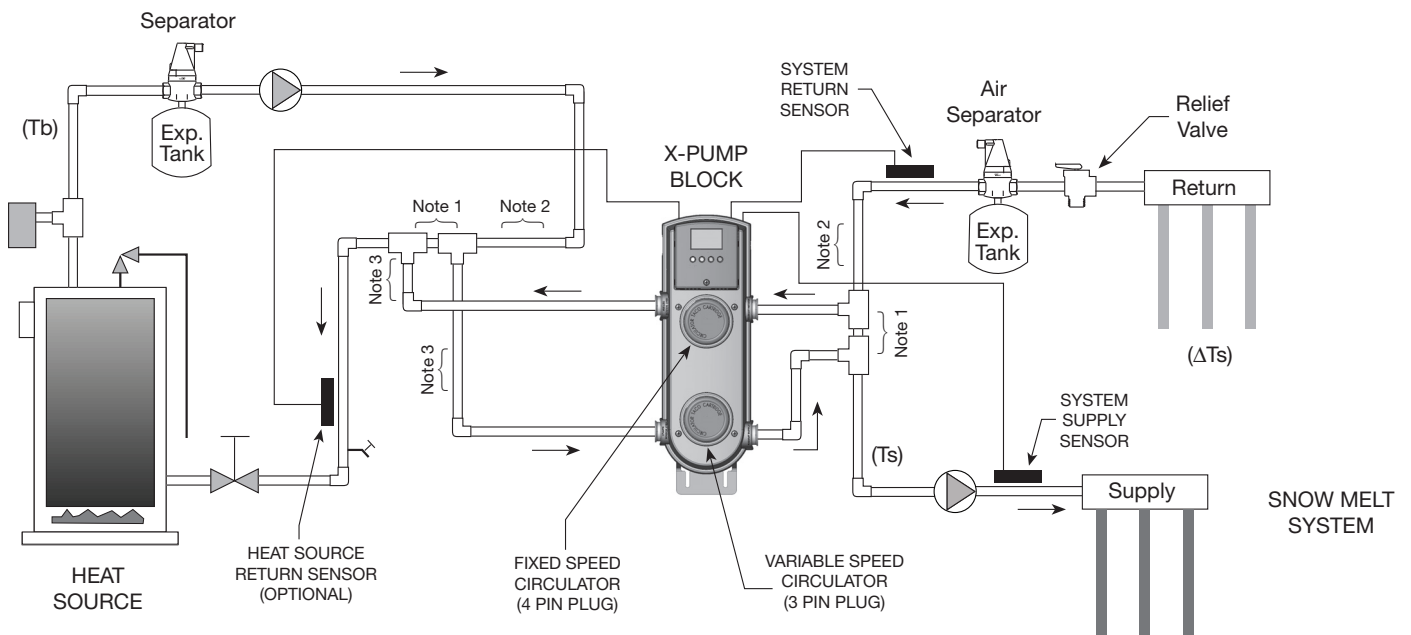


FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard

Typical Radiant Floor to Water Heater Installation



Typical Snow Melt Installation

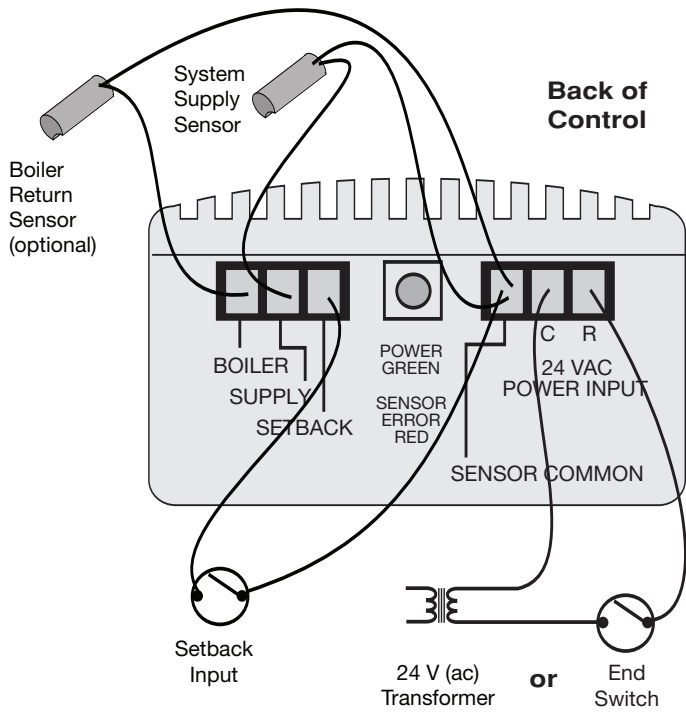


Tb = Boiler Supply Temperature

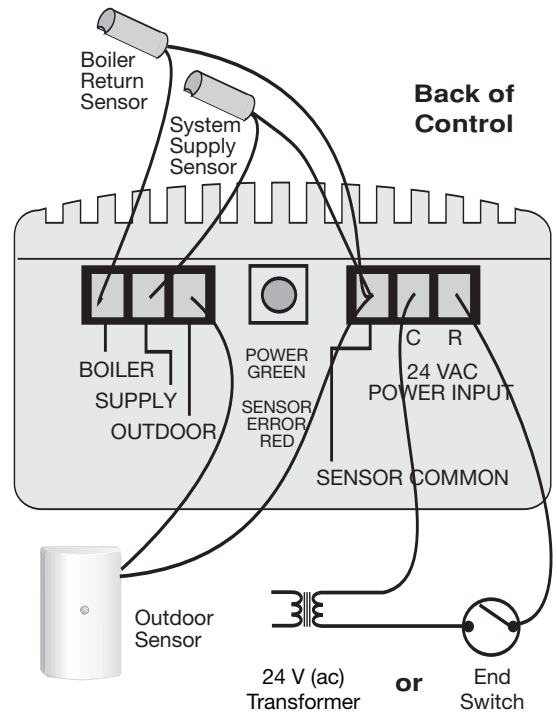
Ts = System Supply Temperature

ΔTs = System Temperature Drop
(typically 20°F for convectors
and 10°F for radiant floor heating)

iSeries Mixing Valve

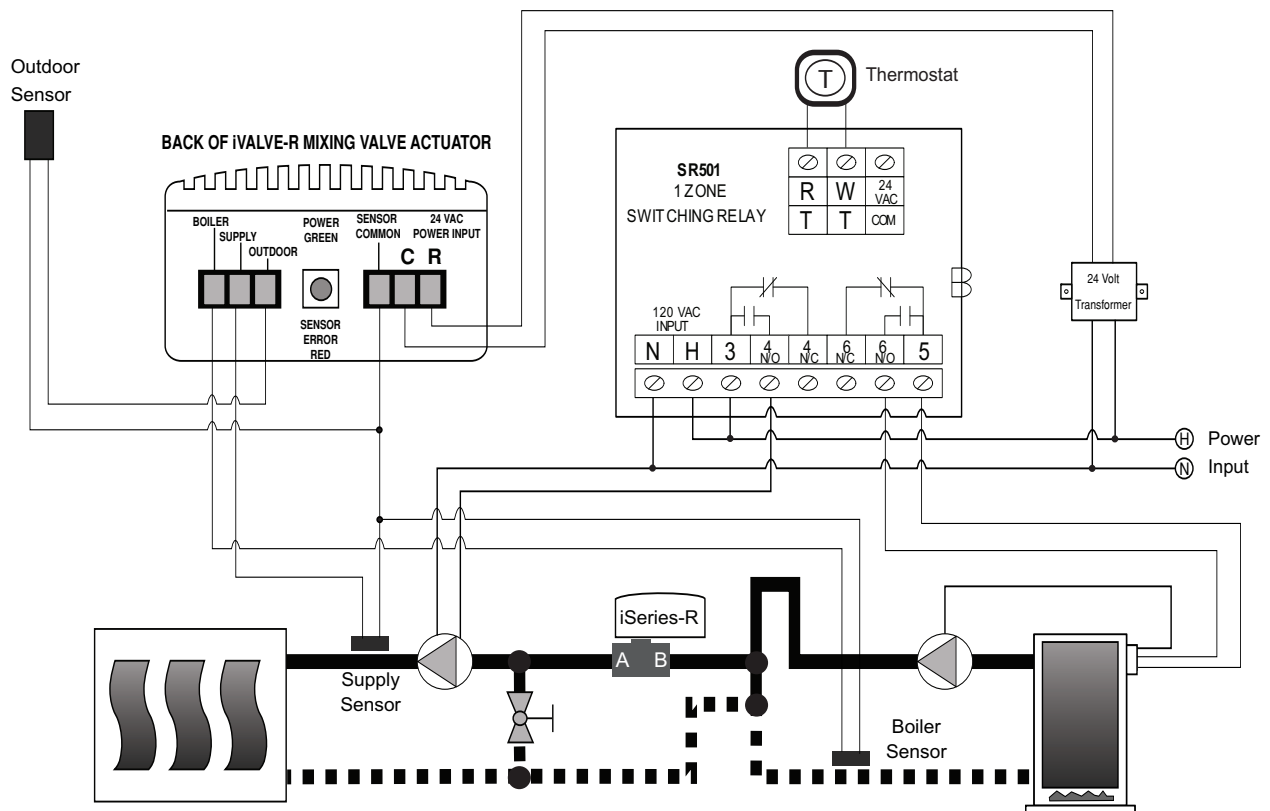


iValve-S



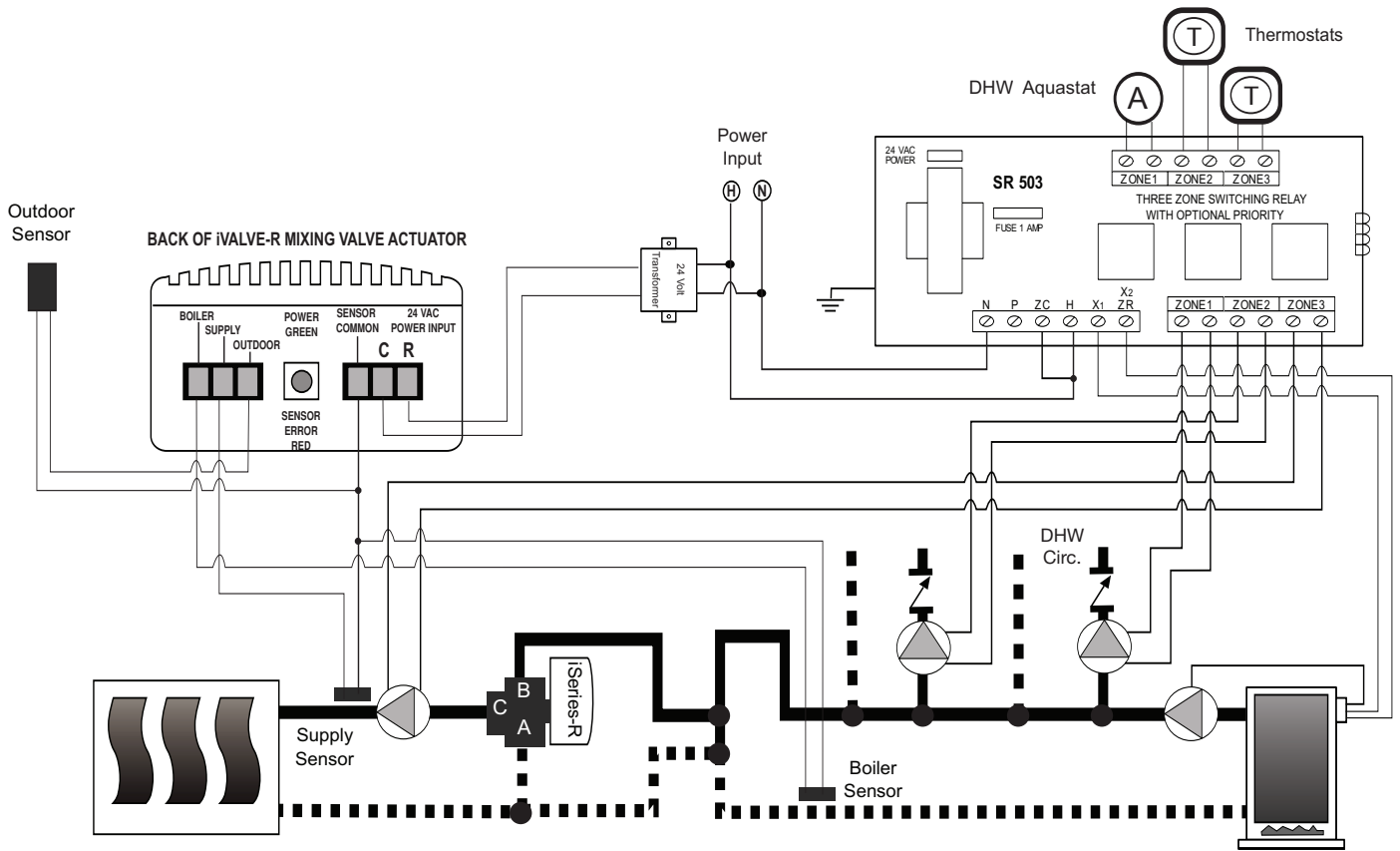
iValve-R

iValve, 2-Way Injection, Single Zone

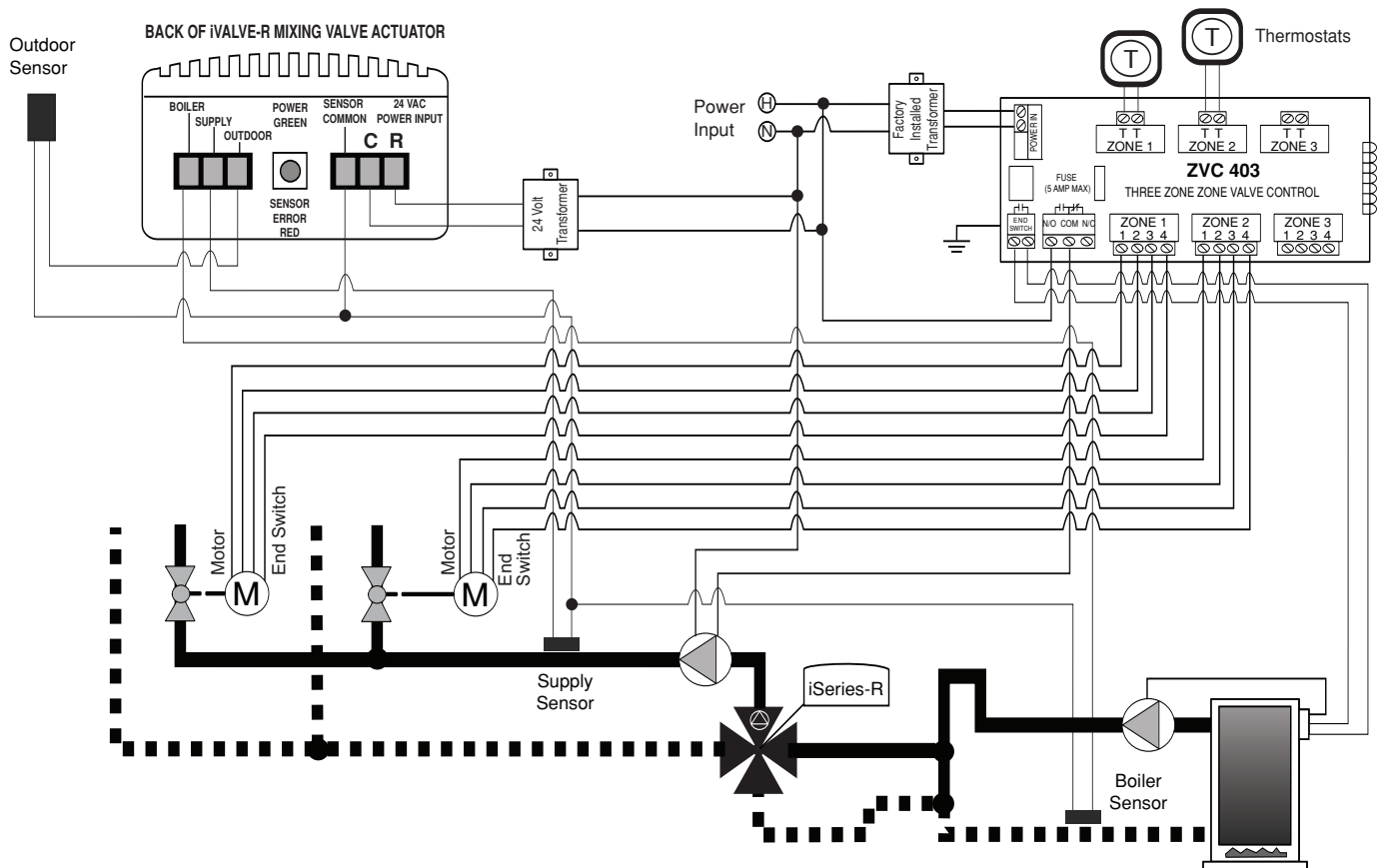


FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard

iValve, 3-Way Mixing Working with SR502/503 Switching Relay with DHW Priority

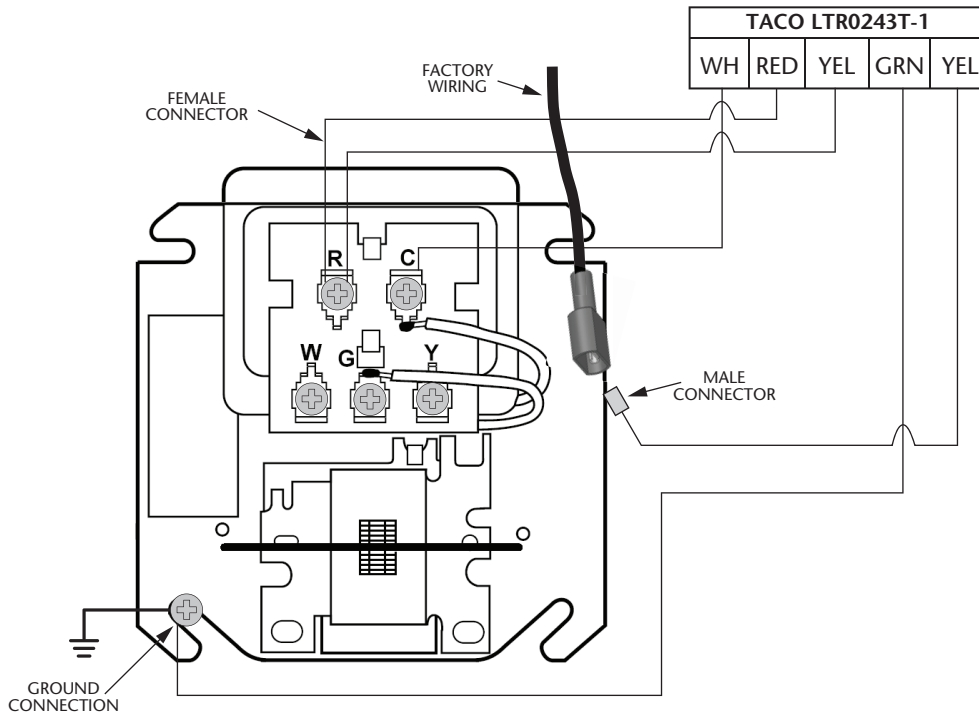


iValve, 4-Way Mixing Working with Zone Valve Control

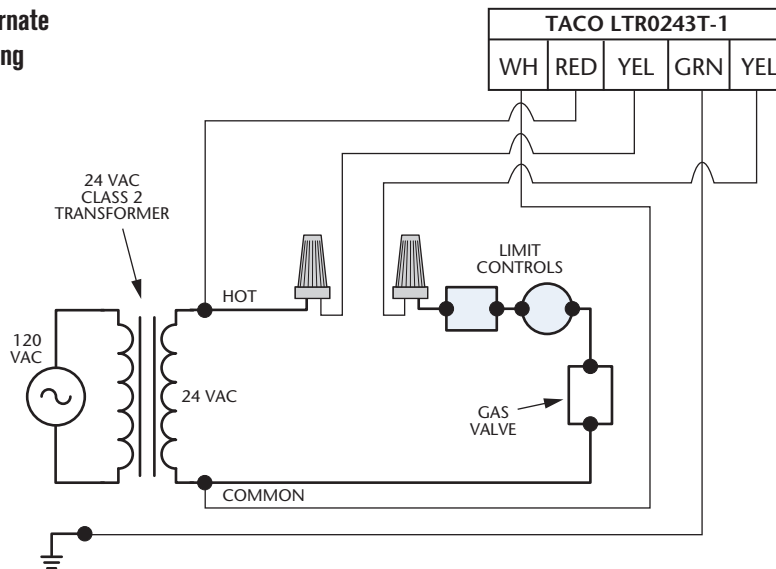


FOR ADDITIONAL WIRING DIAGRAMS, PLEASE SEE www.taco-hvac.com/wiringwizard

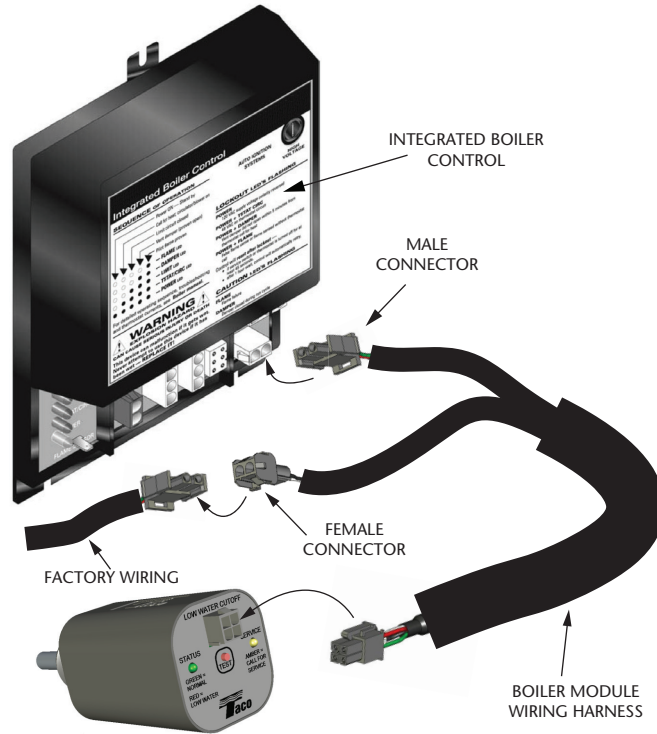
Wiring for Boilers with Honeywell Control Center Model R8285 or Equivalent



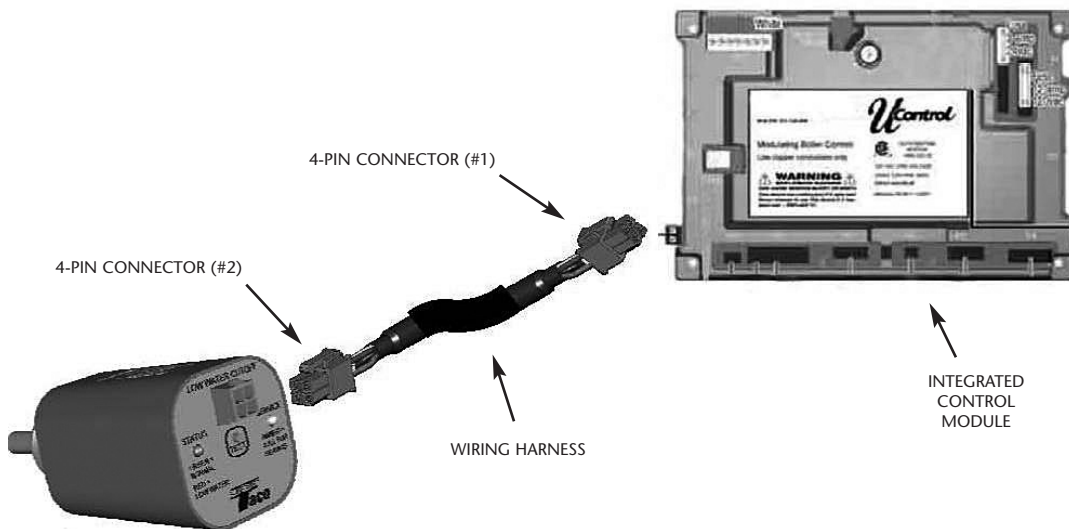
Alternate Wiring



Wiring Boilers with a United Technologies Integrated Control Module and a Taco LTR0243U-1



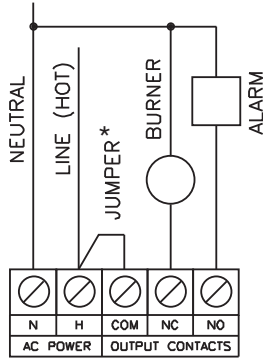
Wiring Boilers with a United Technologies Ucontrol or other Integrated Control Modules which accept a 4-pin harness and a Taco LTR0243L-1



Wiring Instructions

1. Plug the 4-pin connector on the wiring harness (#1 as shown) into the integrated control module.
2. Plug the 4-pin connector on the wiring harness (#2 as shown) into the LTR.

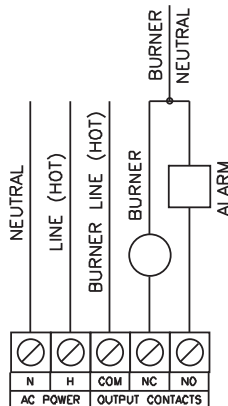
Wiring Taco LN and LTA-2 Series Low Water Cutoffs Using Burner Circuit Power Source



*Factory Installed

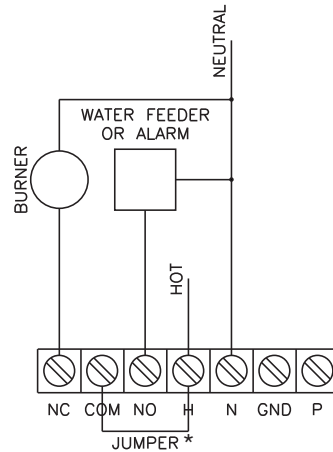
NOTE: For 24 VAC models, LNA024xx and LTA0243S-2, 24 VAC to be supplied by an **EXTERNAL** Class 2 power source to terminals H and N. For 120 VAC models, LNA120xx and LTA1203S-2, 120 VAC is supplied by an external circuit to terminals H and N.

Wiring Taco LN and LTA-2 Series Low Water Cutoffs Using Power Source Other Than Burner Circuit



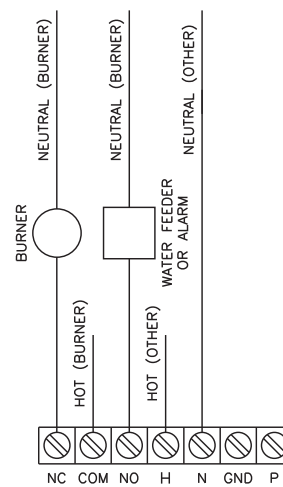
NOTE: For 24 VAC models, LNA024xx and LTA0243S-2, 24 VAC to be supplied by an **EXTERNAL** Class 2 power source to terminals H and N. For 120 VAC models, LNA120xx and LTA1203S-2, 120 VAC is supplied by an external circuit to terminals H and N.

Wiring Taco LT Series (1st generation, -1) Low Water Cutoffs Using Burner Circuit Power Source



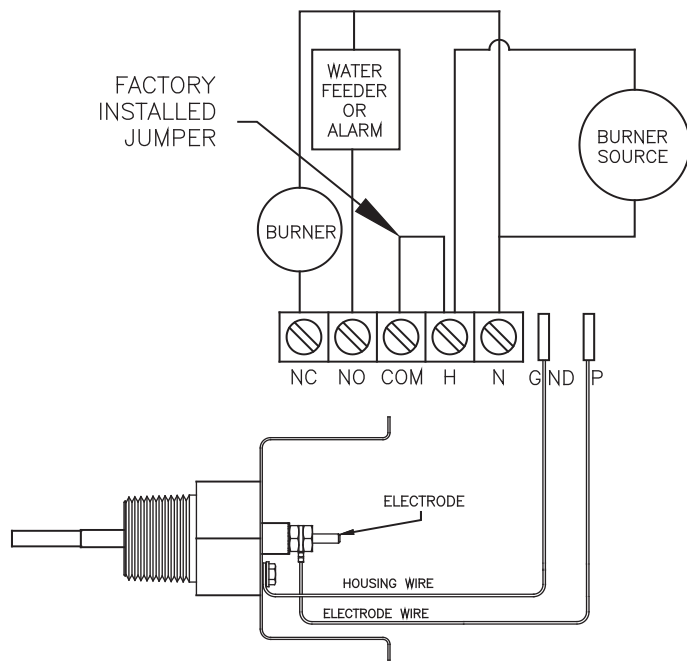
NOTE: For 24 VAC models, LTx024xx-1, 24 VAC to be supplied by an **EXTERNAL** Class 2 power source to terminals H and N. For 120 VAC models, LTx120xx-1, 120 VAC is supplied by an external circuit to terminals H and N.

Wiring Taco LT Series (1st generation, -1) Low Water Cutoffs Using Power Source Other Than Burner Circuit



NOTE: For 24 VAC models, LTx024xx-1, 24 VAC to be supplied by an **EXTERNAL** Class 2 power source to terminals H and N. For 120 VAC models, LTx120xx-1, 120 VAC is supplied by an external circuit to terminals H and N.

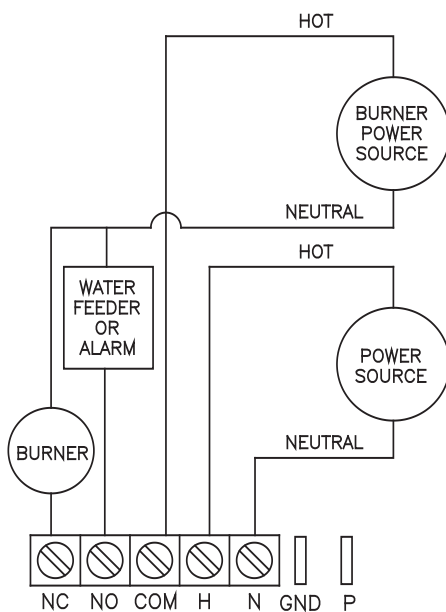
Wiring Taco LF Series Low Water Cutoffs Using Burner Circuit Power Source



NOTE: Remote probe available on remote probe models only.

NOTE: For 24 VAC models, LFX024xx, 24 VAC to be supplied by an **EXTERNAL** Class 2 power source to terminals H and N.
For 120 VAC models, LFX120xx, 120 VAC is supplied by an external circuit to terminals H and N.

Wiring Taco LF Series Low Water Cutoffs Using Power Source Other Than Burner Circuit



NOTE: For 24 VAC models, LFX024xx, 24 VAC to be supplied by an **EXTERNAL** Class 2 power source to terminals H and N.
For 120 VAC models, LFX120xx, 120 VAC is supplied by an external circuit to terminals H and N.

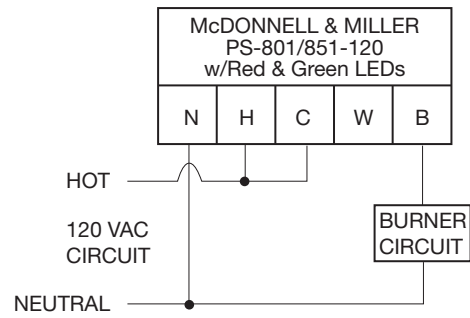
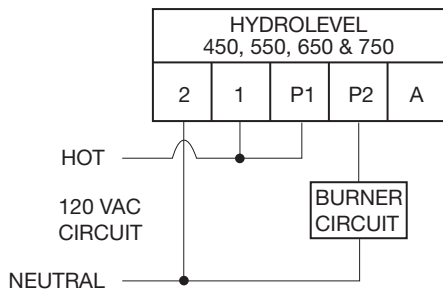
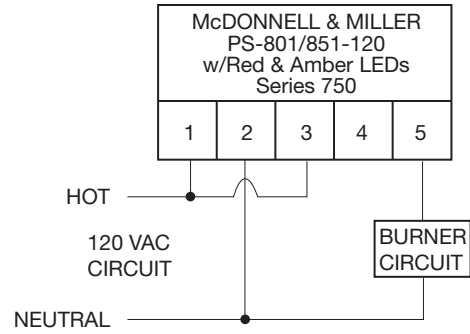
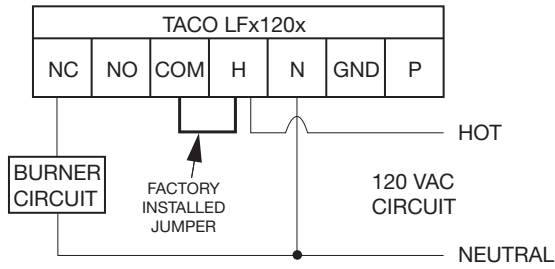
Taco Low Water Cutoff Replacement Guide

Taco	McDonnell & Miller	Hydrolevel	Honeywell
LFA1203S-1 LTA1203N-1 LTA1203S-1	PS-801-120 PSE-801-120 PS-800-120 PS-850-120 900 900C	450 CG450 CGT450 OEM170TD	RW700A1031 RW700A1056 RW700A1080
LFM1203S-1 LTM1203N-1 LTM1203S-1	PS-801-M-120 PS-851-M-120 PS-851-SP-M-120 PS-850-M-120 900M 901M 902M	550 550SV 750 OEM170MC OEM170M	RW700B1054 RW700B1039 RW700B1021
LFA0243S-1 LTA0243N-1 LTA0243S-1	PS-802-24 PSE-802-24 PS-800-24 PS-850-24	400 CG400 OEM24TD	RW700A1098
LFM0243S-1 LTM0243N-1 LTM0243S-1	PS-802-M-24 PS-852-M-24 PS-852-SP-M-24 PS-850-M-24	500 500SV 700 OEM24MC	
LFA1203R-1 LTA1203R-1	750-T-120 750-120	650R	
LFM1203R-1 LTM1203R-1	750-MT-120 750-M-120	550R	
LFA1202R-1 LTA1202R-1	PS-851-RX2-120	650R	
LFM1202R-1 LTM1202R-1	PS-851-M-RX2-120	550R	
LFA0242R-1 LTA0242R-1	PS-802-RX2-24	400R	
LTA0243S-2 LNA0243S-1	PS-852-24 PS-852-SP-24 750-MT-SP-24 750P-MT-24 750P-MT-U-24	24 24SV 600 600SV OEM24C	
LTA1203S-2 LNA1203S-1	RB-120 RB-122E PS-851-120 PS-851-SP-120 750P-MT-120 750P-MT-SP-120 750P-MT-U-120 901 RB-120II RB-122	170 170SV 1150 650 650SV OEM170C OEM170	RW700A1007 RW700A1006
LTR0243T-1	RB-24E RB-24	1100	
P3R-1	RS-1-BR-1 RS-1-LP RS-1-LP-S	EL1214-R	
EWF120	WFE-120 WF2-U-120V WF-2-120 WF-4-120	VRTX-120 V-120-1&2	VW400A1004
EWF024	WFE-24 WF2-U-24V WF-2-24 WF-4-24	VRTX-24 V-24-1&2	VW800A1004

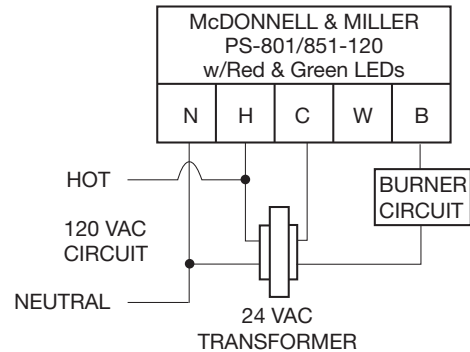
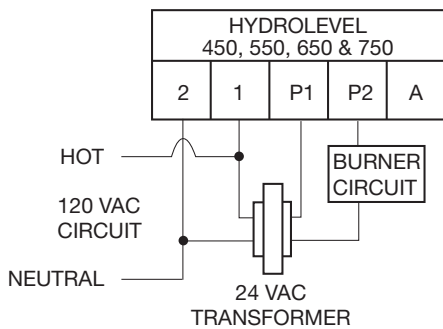
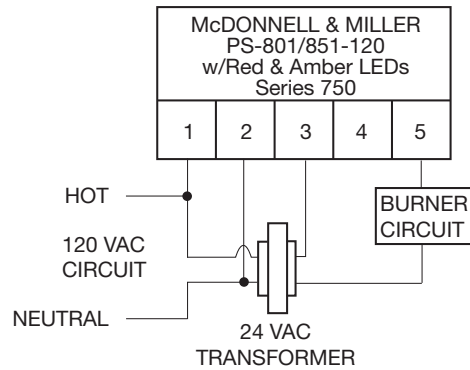
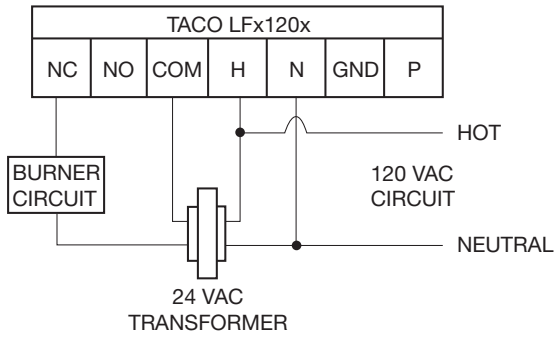
Bold / Italics Indicates Discontinued Part Number

Taco LF Series 120 Volt LWCO Competitive Wiring Cross Reference

120 VAC Models with 120 VAC Burner Circuits

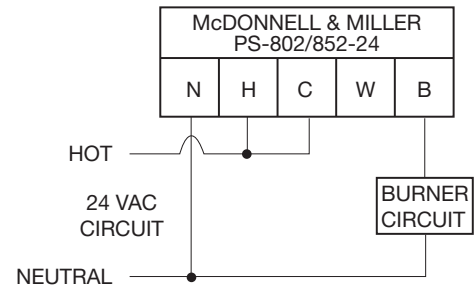
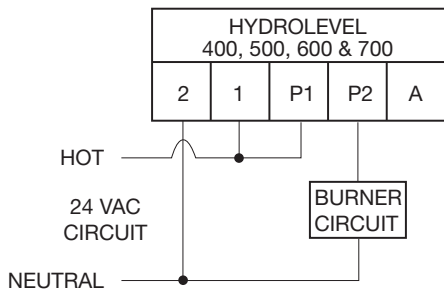
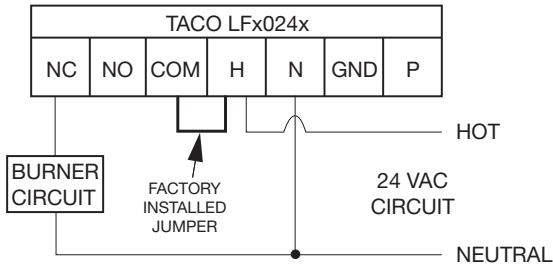


120 VAC Models with 24 VAC Burner Circuits

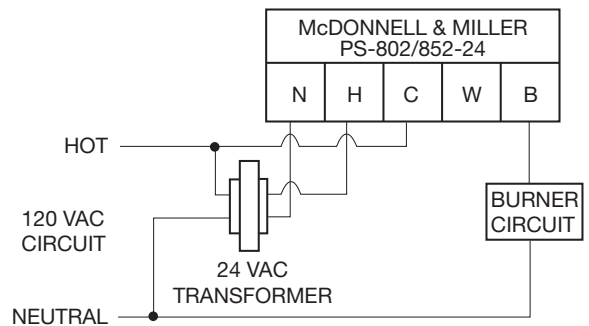
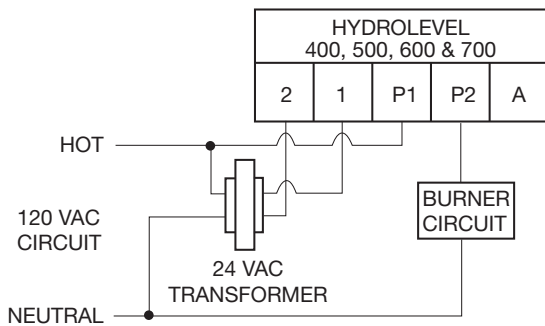
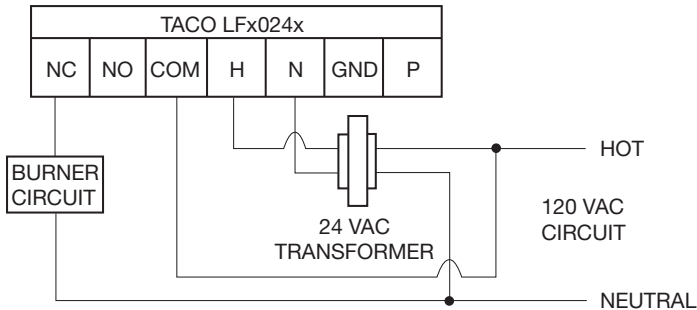


Taco LF Series 24 Volt LWCO Competitive Wiring Cross Reference

24 VAC Models with 24 VAC Burner Circuits

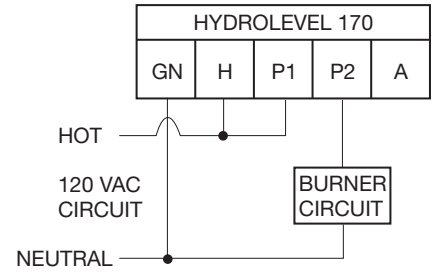
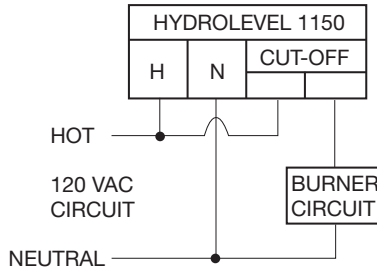
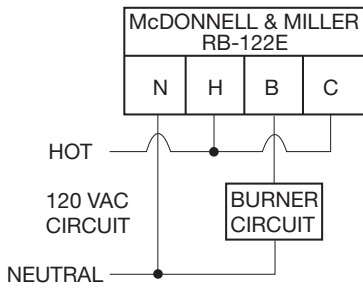
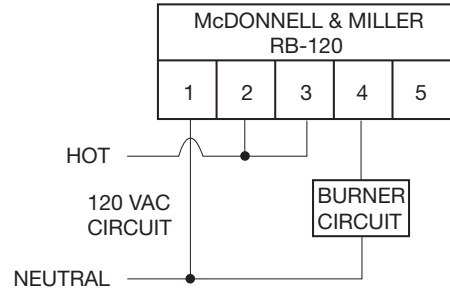
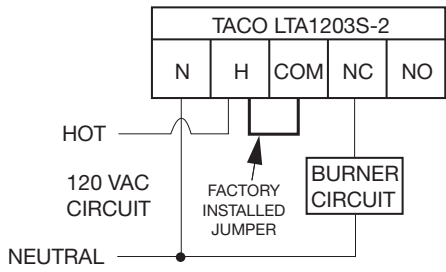


24 VAC Models with 120 VAC Burner Circuits

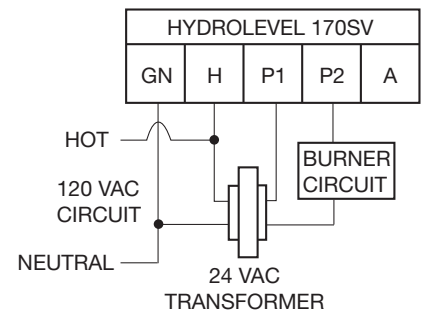
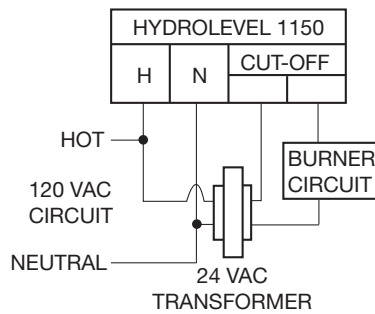
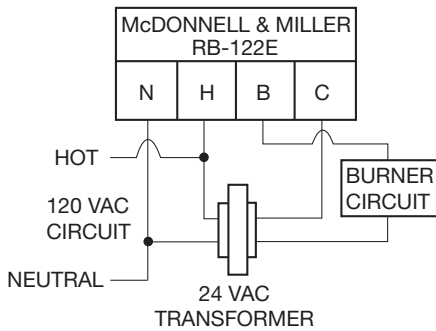
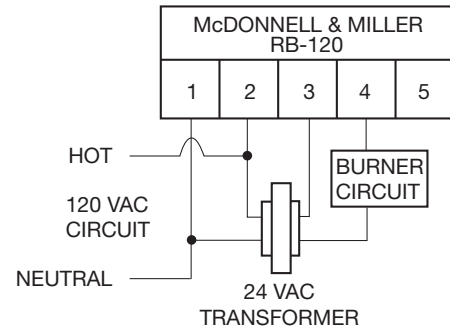
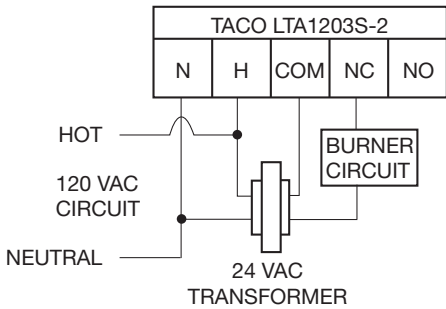


Taco LTA-2 Series 120 Volt LWCO Competitive Wiring Cross Reference

120 VAC Models with 120 VAC Burner Circuits

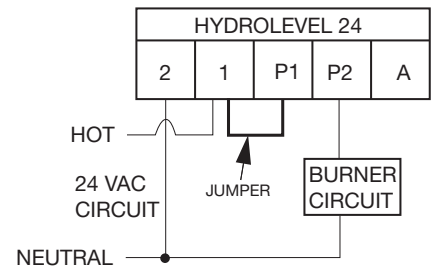
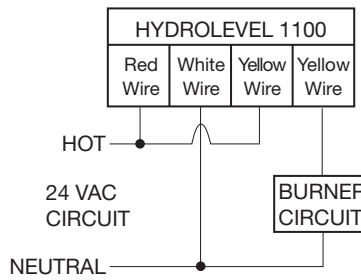
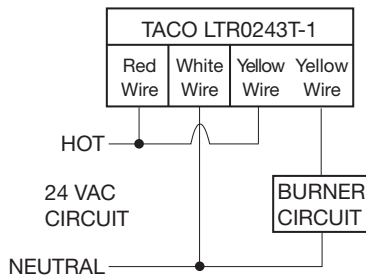
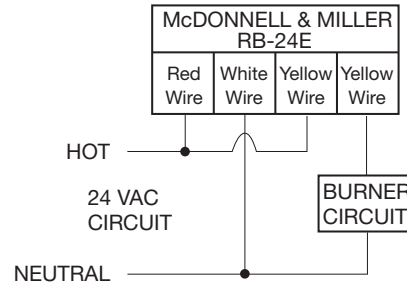
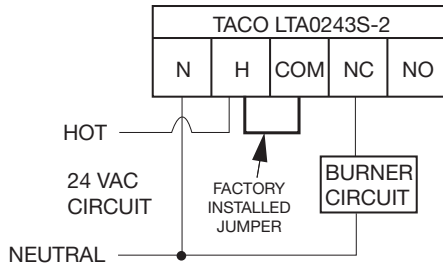


120 VAC Models with 24 VAC Burner Circuits

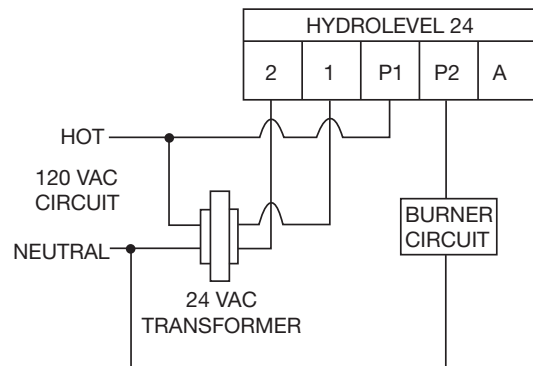
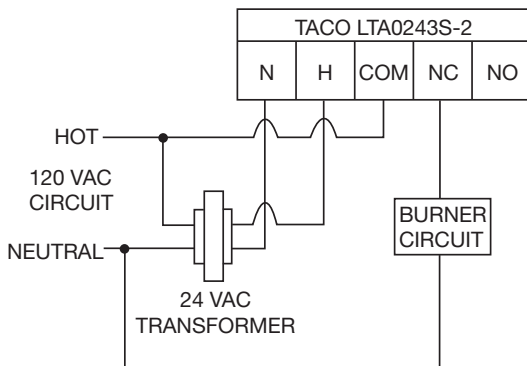


Taco LTR and LTA-2 Series 24 Volt LWCO Competitive Wiring Cross Reference

24 VAC Models with 24 VAC Burner Circuits

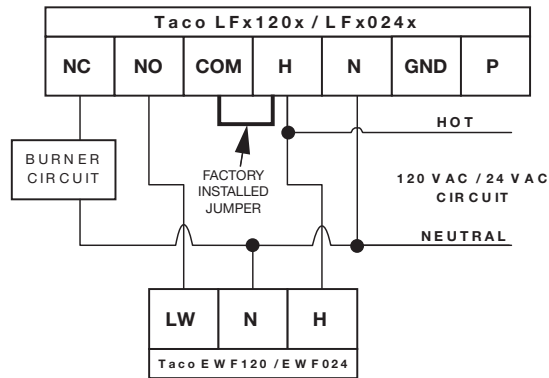


24 VAC Models with 120 VAC Burner Circuits



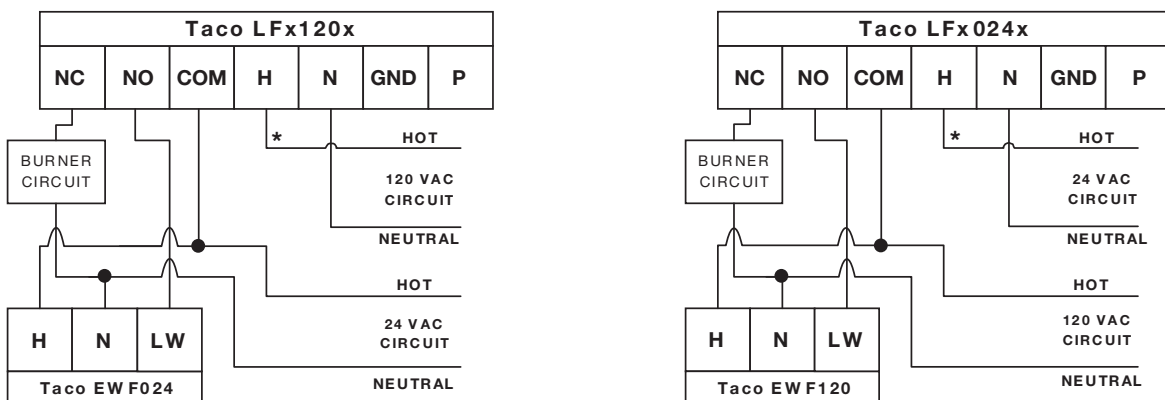
Wiring Taco LF Series Low Water Cutoffs to Taco Electric Water Feeder with the Same Voltages

EWF Standard Wiring



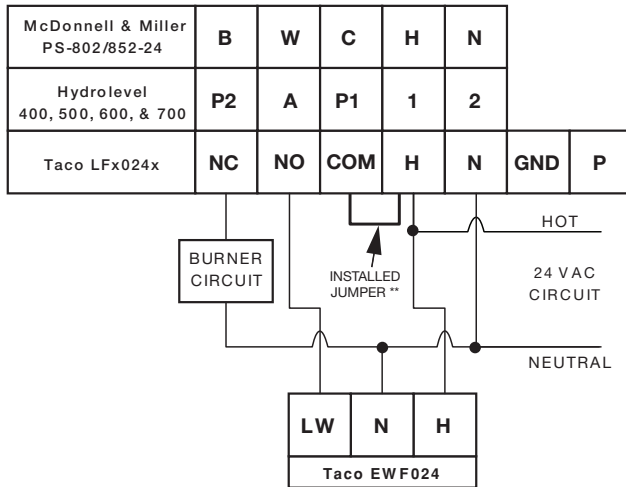
Wiring Taco LF Series Low Water Cutoffs to Taco Electric Water Feeder with Different Burner Voltages

EWF Alternate Wiring



* NOTE: Remove factory installed
jumper between H and COM terminals

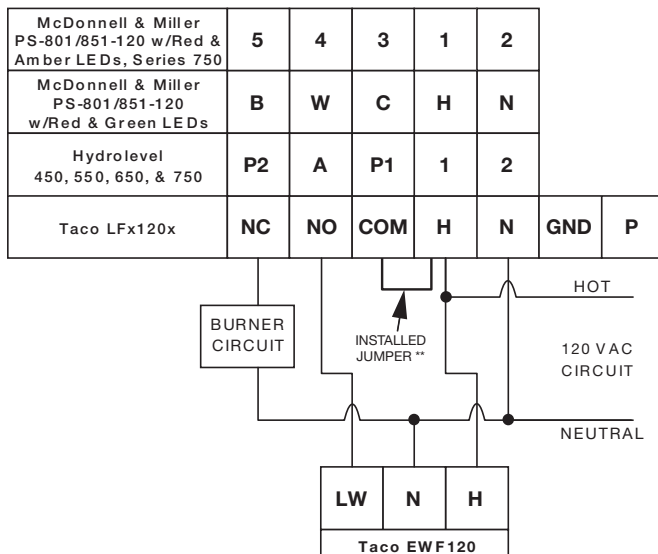
Wiring Taco 24VAC Electric Water Feeder to Taco LF Series 24VAC Low Water Cutoff or 24VAC McDonnell & Miller or Hydrolevel Low Water Cutoffs



** May be factory installed on some LWCOs

NOTE: Wiring shown only for control and burner circuits of the same voltage. Some terminal designations are not in their actual order on the LWCOs.

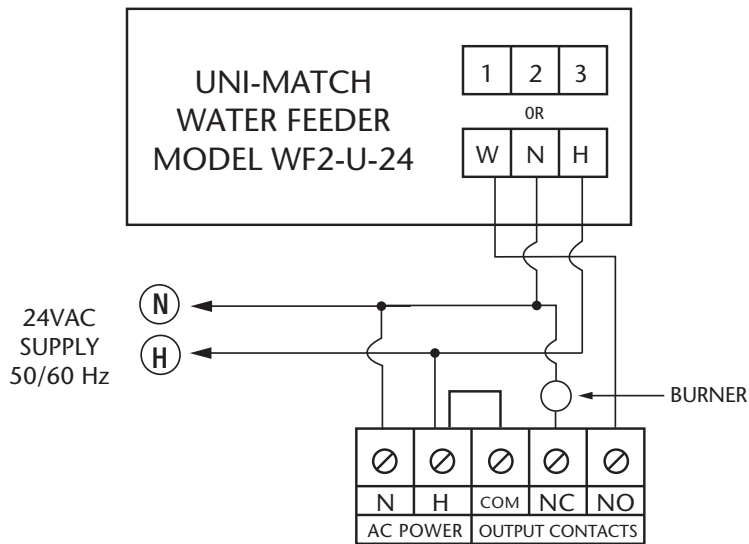
Wiring Taco 120VAC Electric Water Feeder to Taco LF Series 120VAC Low Water Cutoff or 120VAC McDonnell & Miller or Hydrolevel Low Water Cutoffs



** May be factory installed on some LWCOs

NOTE: Wiring shown only for control and burner circuits of the same voltage. Some terminal designations are not in their actual order on the LWCOs.

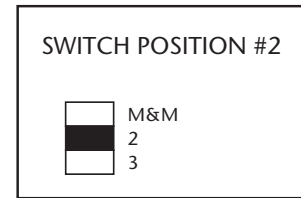
Wiring TACO LTA-2 or LF Series 24VAC Low Water Cutoff to McDonnell & Miller Series WF2 Uni-Match Electric Water Feeder



24 VAC LWCO Using Burner Circuit Power Source

Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.

Do not connect feeder to a manual reset LWCO.



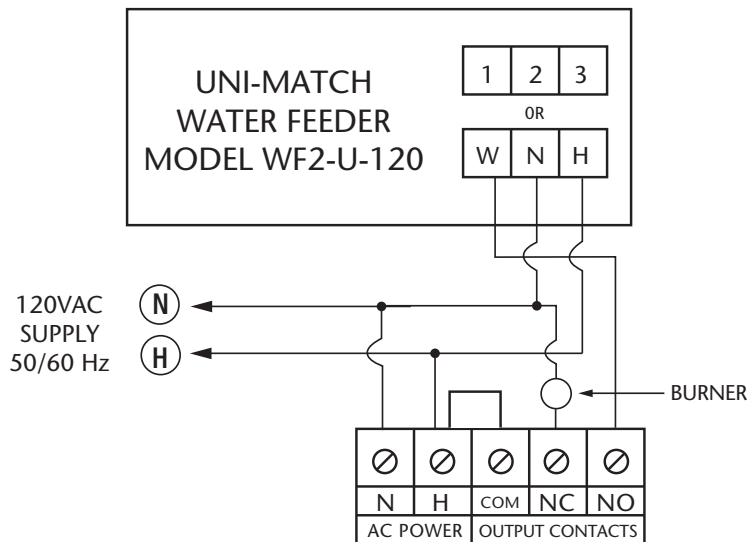
Note on switch position:

Switch setting 1 (M&M), the feed cycle repeats indefinitely. Position 2 and 3 gives one feed cycle.

If using the LTA-2 series, choose whichever position best matches the application:

- WF-2 switch to position 1
 - 60 sec. delay, 90 sec. feed, repeats
- WF-2 switch to position 2
 - 90 sec. delay, 90 sec. feed
- WF-2 switch to position 3
 - 100 sec. delay, 90 sec. feed

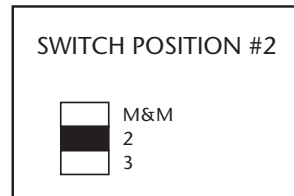
Wiring TACO LTA-2 or LF Series 120VAC Low Water Cutoff to McDonnell & Miller Series WF2 Uni-Match Electric Water Feeder



120 VAC LWCO Using Burner Circuit Power Source

Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.

Do not connect feeder to a manual reset LWCO.



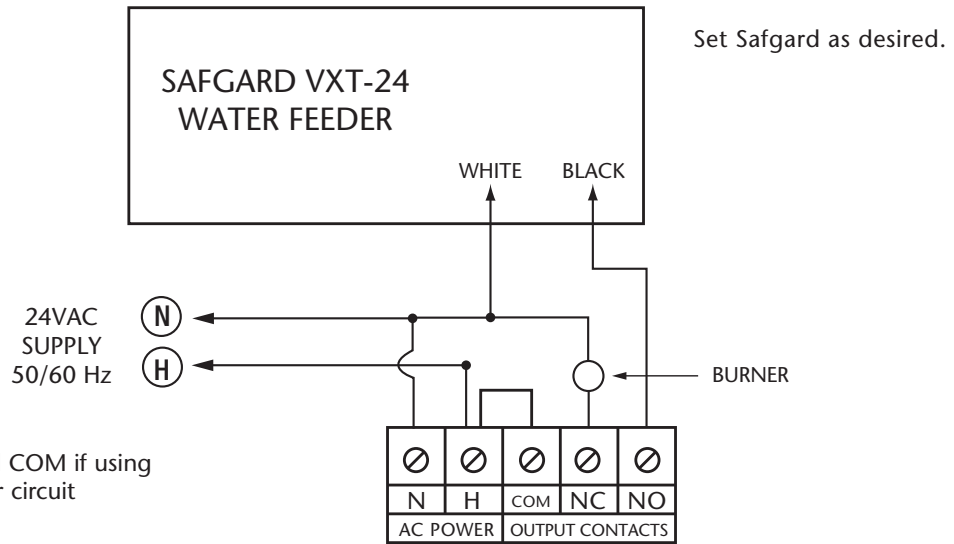
Note on switch position:

Switch setting 1 (M&M), the feed cycle repeats indefinitely. Position 2 and 3 gives one feed cycle.

If using the LTA-2 series, choose whichever position best matches the application:

- WF-2 switch to position 1
 - 60 sec. delay, 90 sec. feed, repeats
- WF-2 switch to position 2
 - 90 sec. delay, 90 sec. feed
- WF-2 switch to position 3
 - 100 sec. delay, 90 sec. feed

Wiring TACO LF Series 24VAC Low Water Cutoff to Hydrolevel VXT-24 Water Feeder (Non-Display Model)

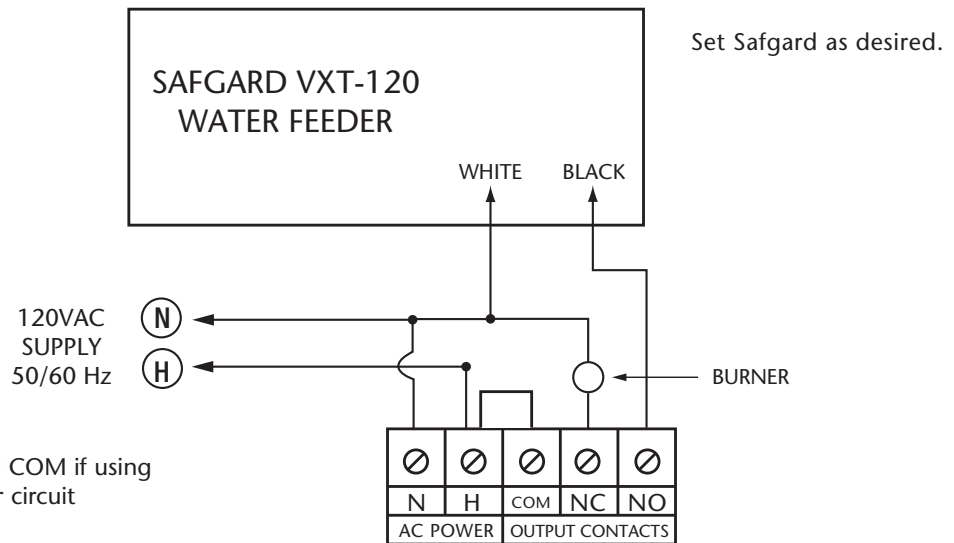


Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.

Do not connect feeder to a manual reset LWCO.

24 VAC LWCO Using Burner Circuit Power Source

Wiring TACO LF Series 120VAC Low Water Cutoff to Hydrolevel VXT-120 Water Feeder (Non-Display Model)

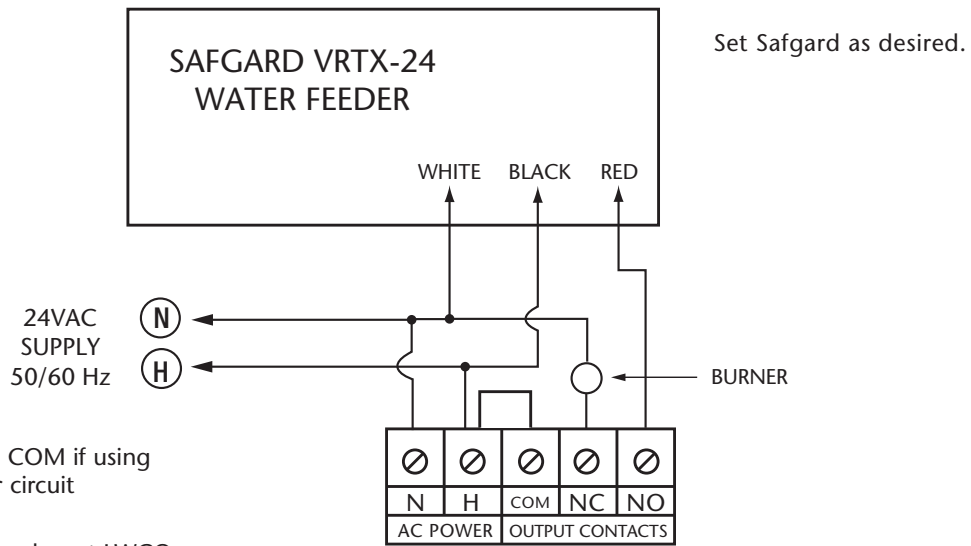


Remove jumper between H and COM if using power source other than burner circuit or when using mixed voltages.

Do not connect feeder to a manual reset LWCO.

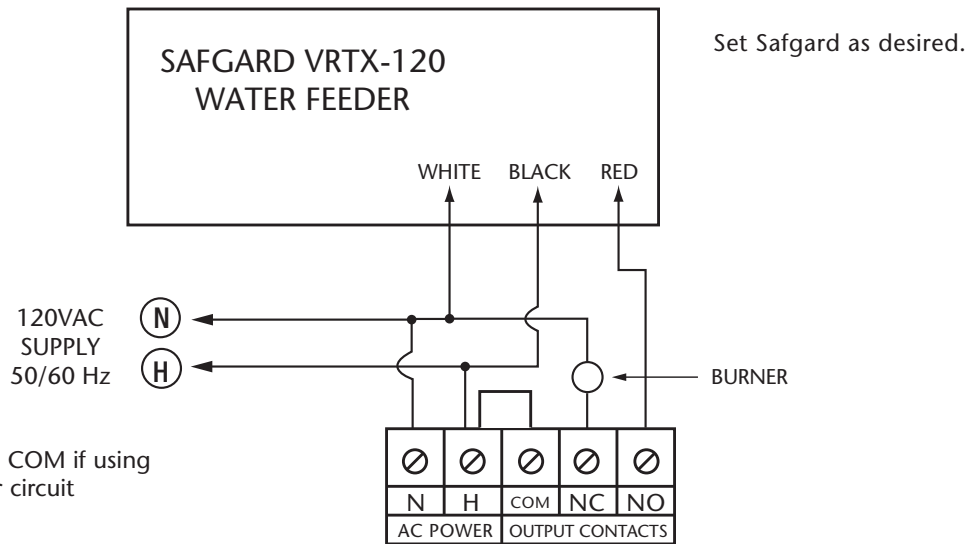
120 VAC LWCO Using Burner Circuit Power Source

Wiring TACO LTA-2 or LF Series 24VAC Low Water Cutoff to Hydrolevel VXT-24 Programmable Water Feeder (Model with Display)



24 VAC LWCO Using Burner Circuit Power Source

Wiring TACO LTA-2 or LF Series 120VAC Low Water Cutoff to Hydrolevel VXT-120 Programmable Water Feeder (Model with Display)

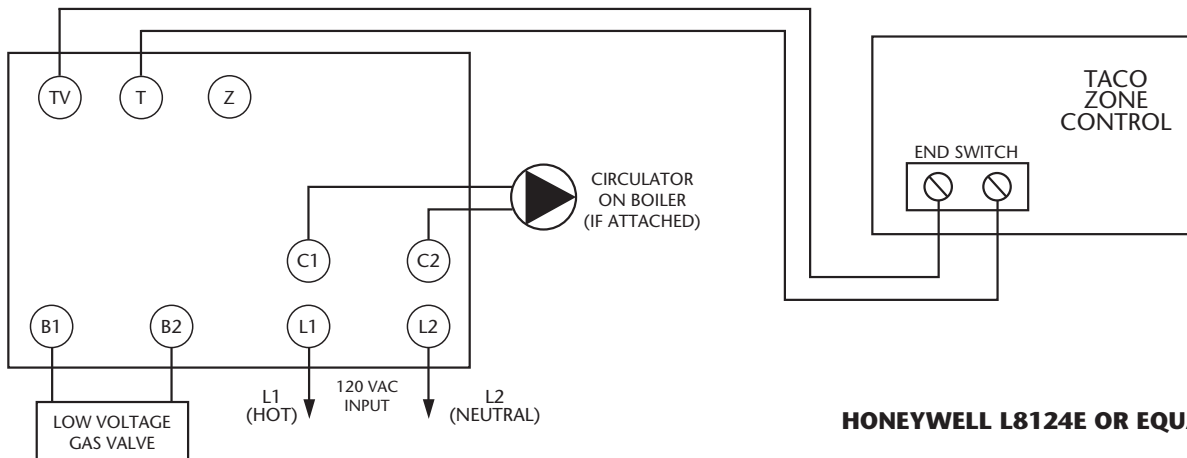
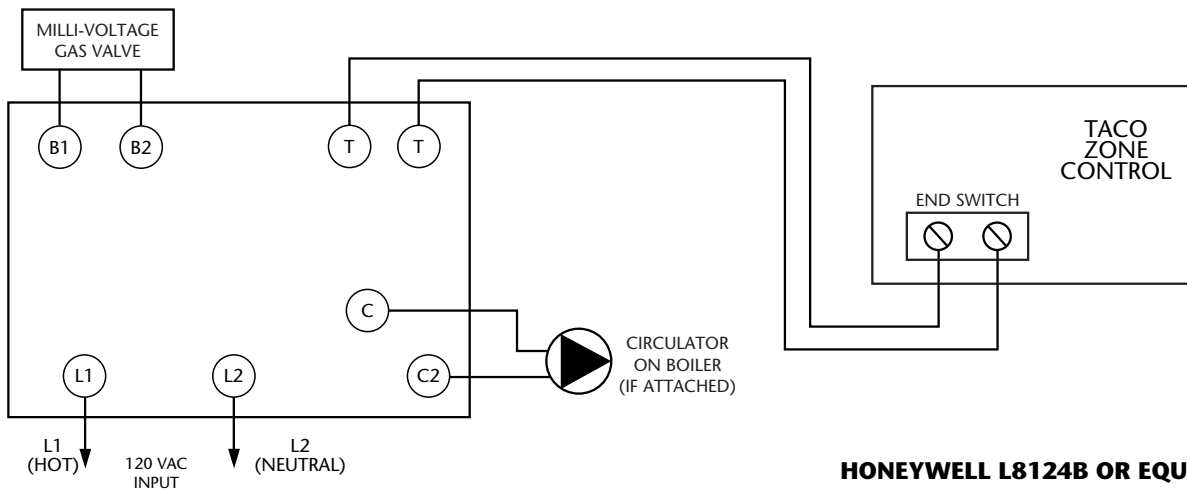
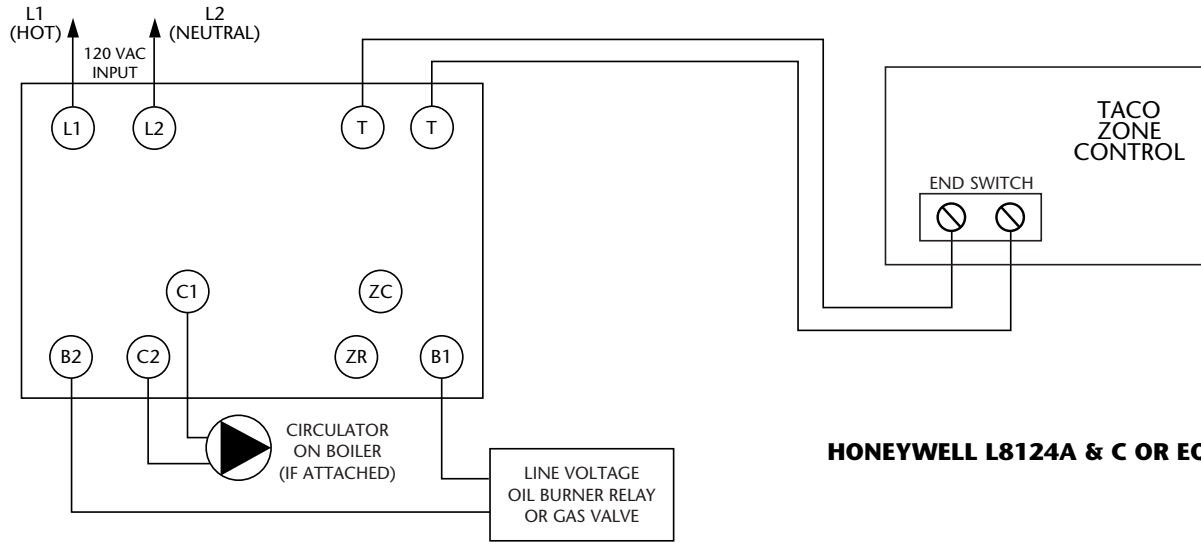


120 VAC LWCO Using Burner Circuit Power Source

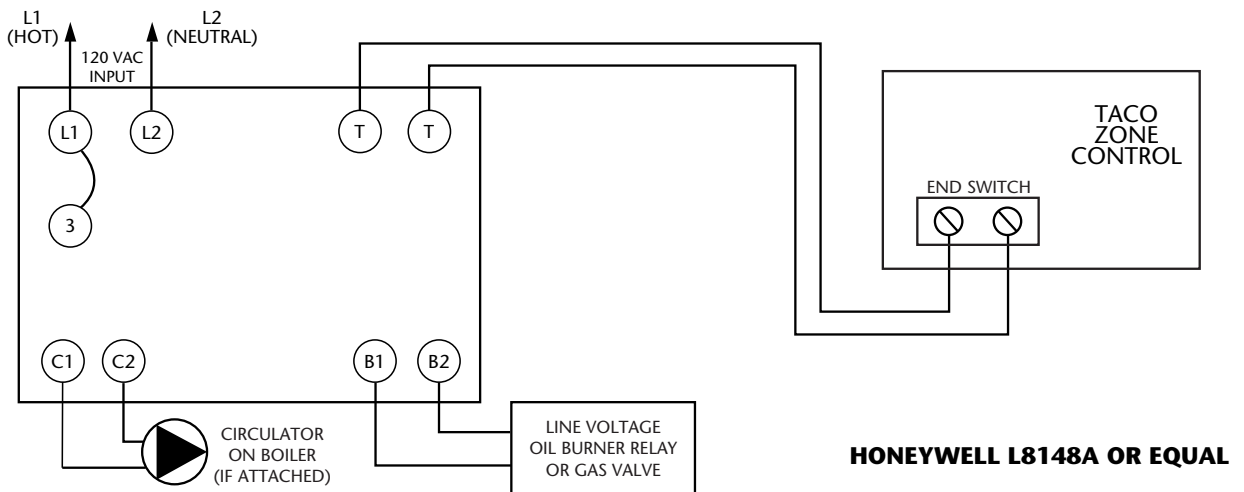
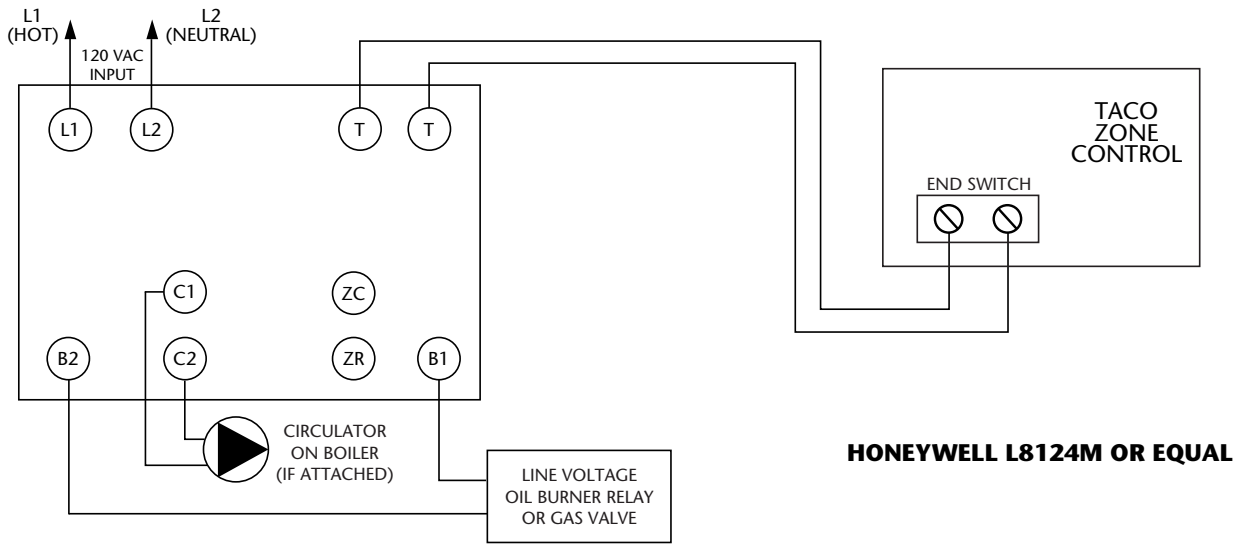
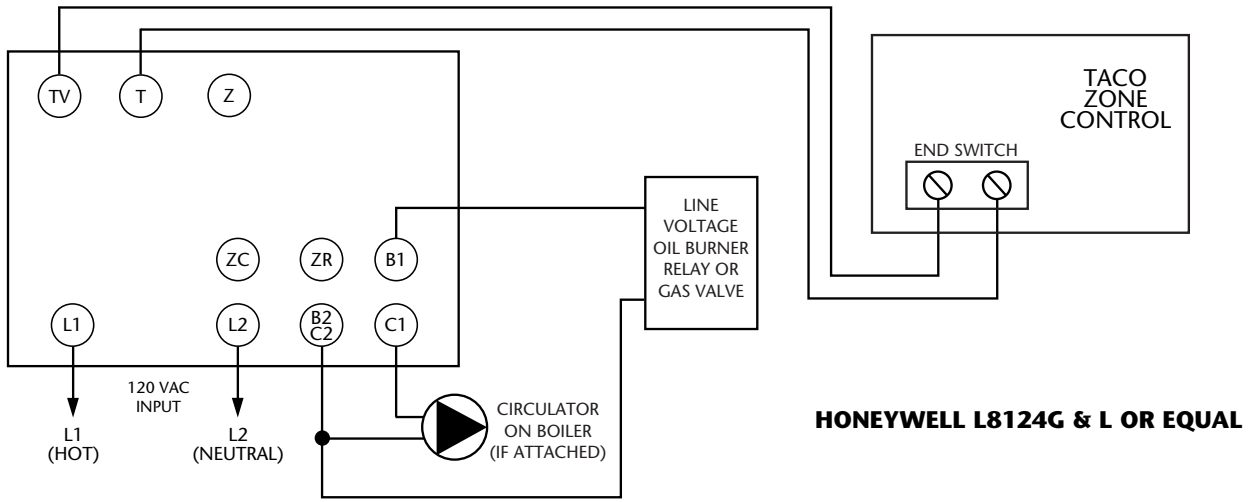
Taco LTR, LN, LT-1, LTA-2 & LF Series Low Water Cutoff and Taco Electric Water Feeder Wiring Cross Reference

Manufacturer	Device or Series	Power Connections		Output Contacts			Remote Probes	
		Hot	Neutral	Common	To Burner Circuit	To EWF's LW Terminal/Alarm	Probe	Probe Preference
Taco	LF & LT-1 Series	H	N	COM	NC	NO	P	GND
Taco	LTA-2 & LN Series	H	N	COM	NC	NO	—	—
Taco	LTR Series	Red Wire	White Wire	Yellow Wire	Yellow Wire	—	—	—
McDonnell & Miller	PS-801/851 (Older Models w/Red & Amber LEDs)	1	2	3	5	4	P or J2	Chassis GND
McDonnell & Miller	PS-801/851 (New Models w/Red & Green LEDs)	H	N	C	B	W	J2	Chassis GND
McDonnell & Miller	PS-802/852 (Older Models w/Red & Amber LEDs)	H	N	C	B	W	J7	Chassis GND
McDonnell & Miller	PS-802/852 (Older Models w/Red & Green LEDs)	H	N	C	B	W	J3	Chassis GND
McDonnell & Miller	Series 750	1	2	3	5	4	P	Chassis GND
McDonnell & Miller	RB-122	H (Black Wire)	N (White Wire)	C (Yellow Wire)	B (Yellow Wire)	—	—	—
McDonnell & Miller	RB-120	1	2	3	4	5	—	—
McDonnell & Miller	RB-24	Red Wire	White Wire	Yellow Wire	Yellow Wire	—	—	—
Hydrolevel	24	1	2	P1	P2	A	—	—
Hydrolevel	170	H	GN	P1	P2	A	—	—
Hydrolevel	1100	Red Wire	White Wire	Yellow Wire	Yellow Wire	—	—	—
Hydrolevel	1150	H (Black Wire)	N (White Wire)	CUT-OFF (Yellow Wire)	CUT-OFF (Yellow Wire)	—	—	—
Hydrolevel	400, 500, 600, 700, 450, 550, 650, 750	1	2	P1	P2	A	H3	Chassis GND
Hydrolevel	RW700 Series (Except RW700A1098)	L1	L2	—	B	A	2 Red Wires, White Wire	Green Wire
Hydrolevel	RW700A1098	T1	T2	—	B	A	2 Red Wires, White Wire	Green Wire

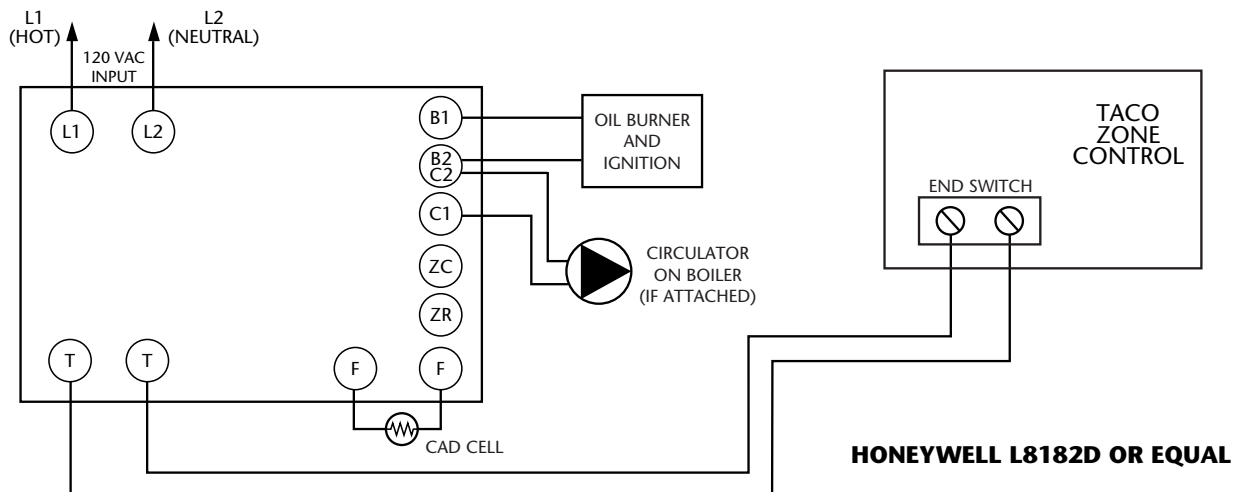
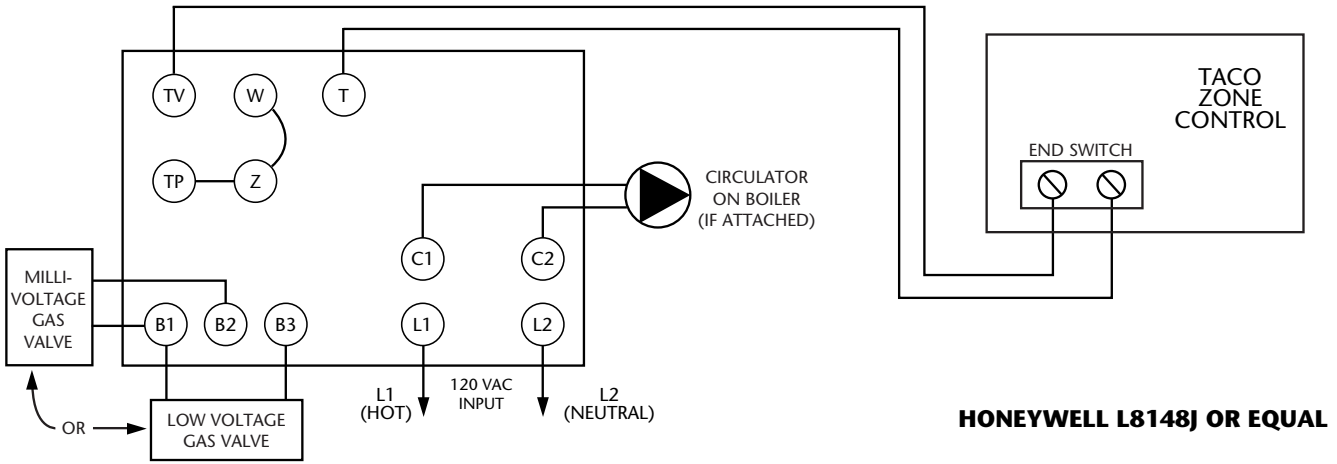
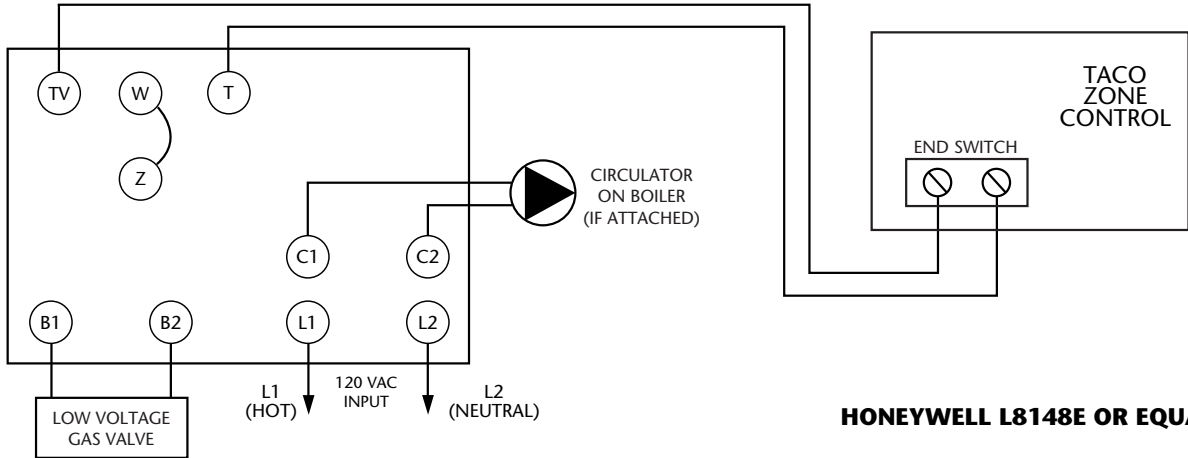
Aquastat Wiring



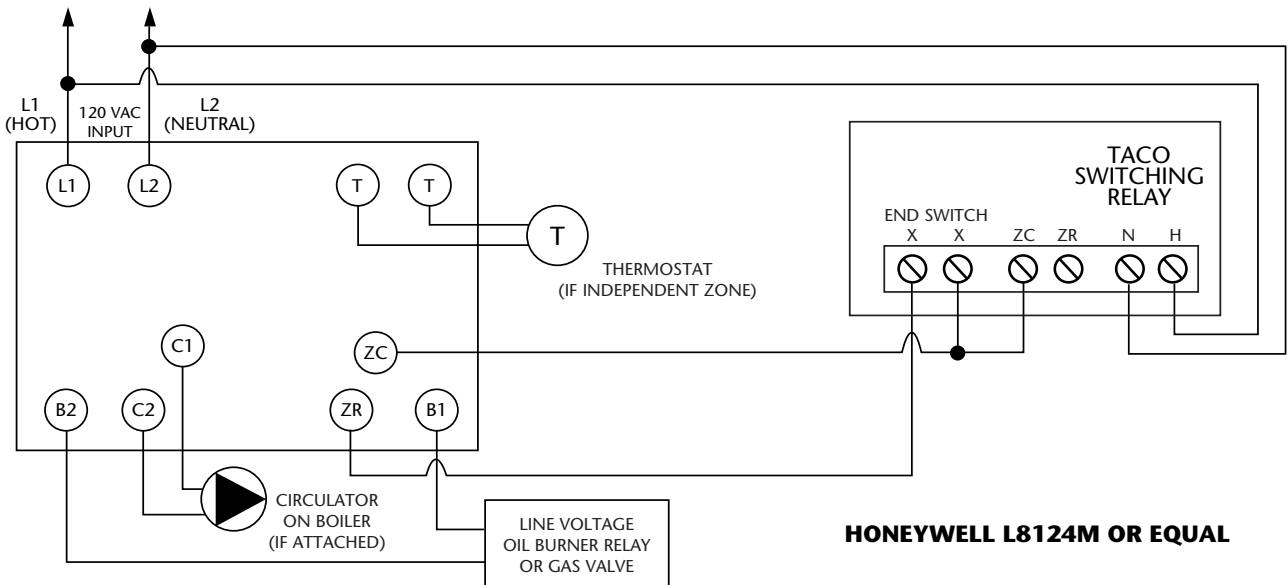
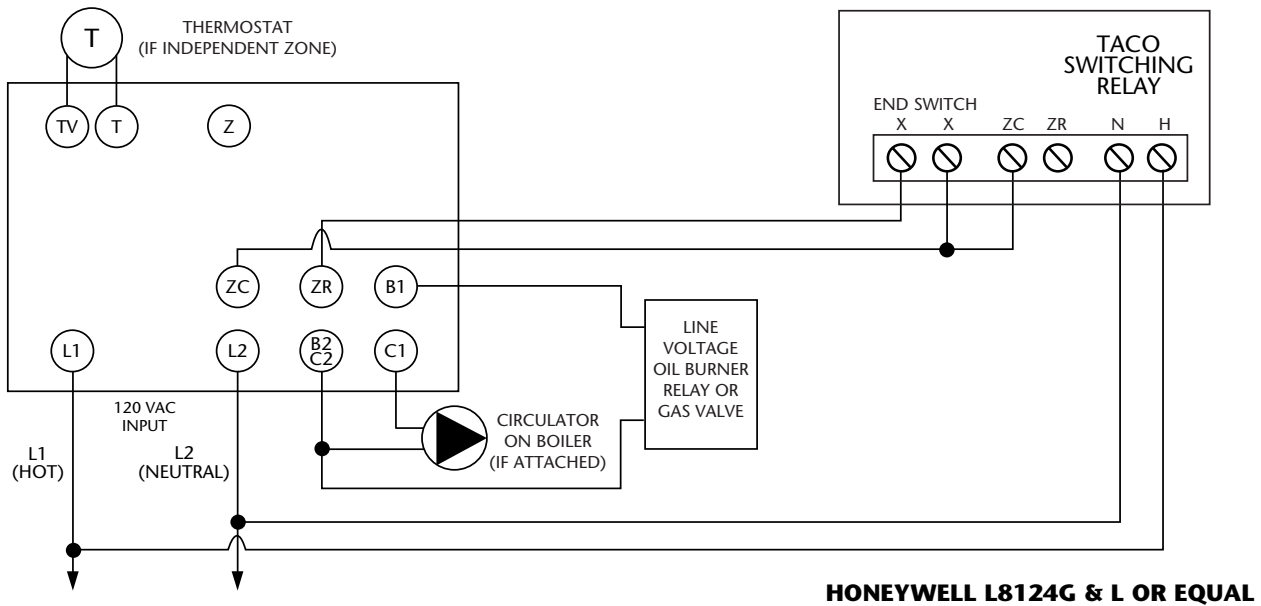
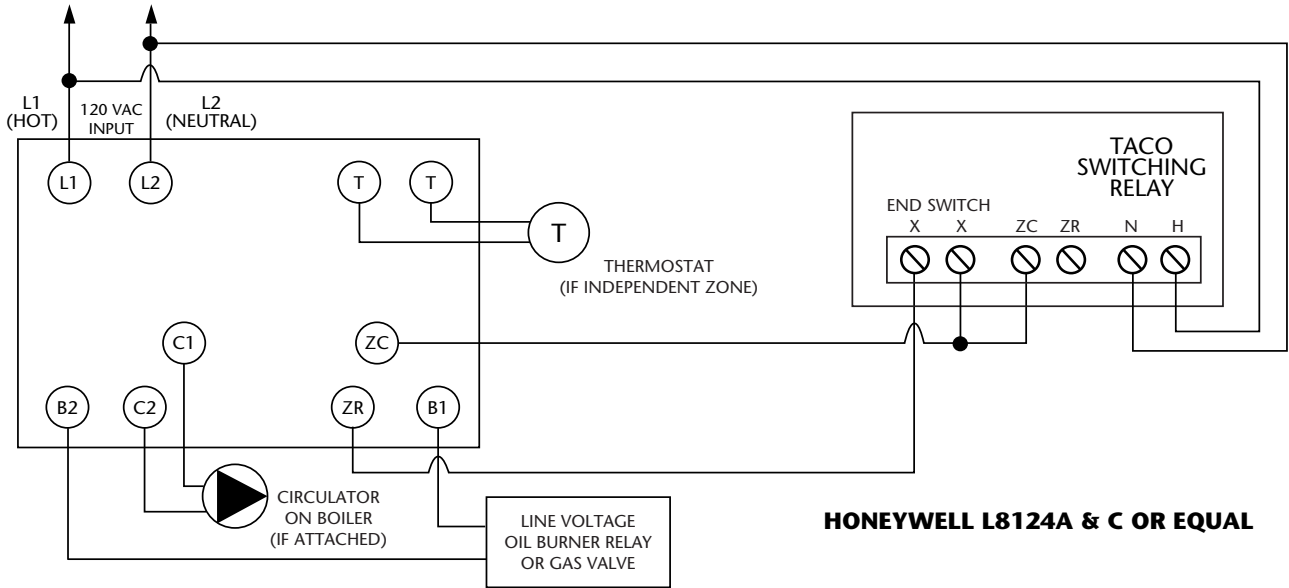
Aquastat Wiring



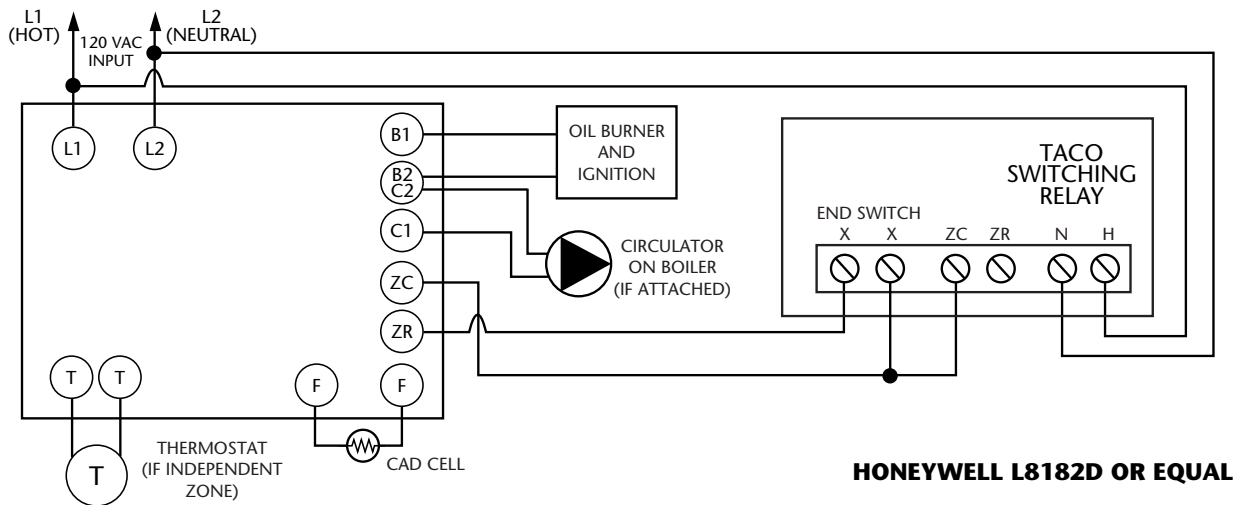
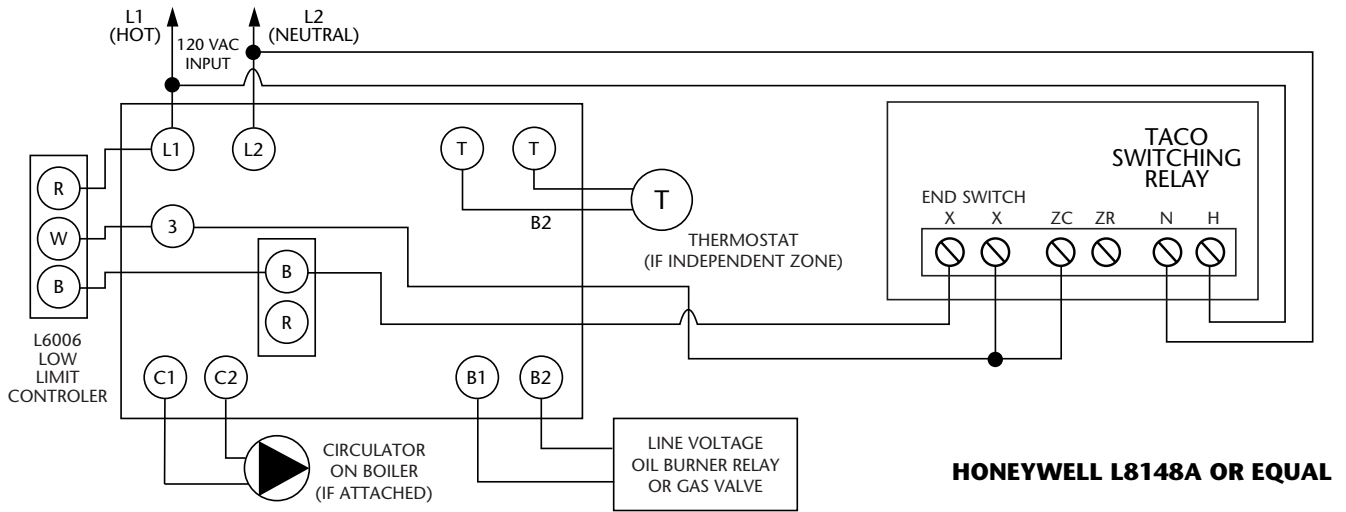
Aquastat Wiring



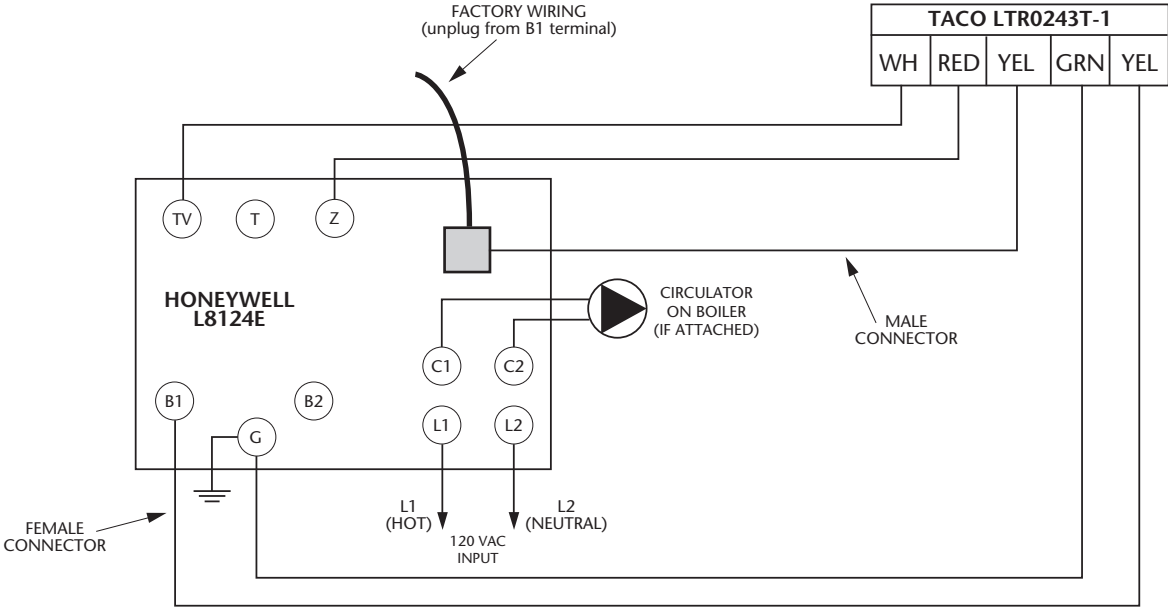
Aquastat Wiring



Aquastat Wiring

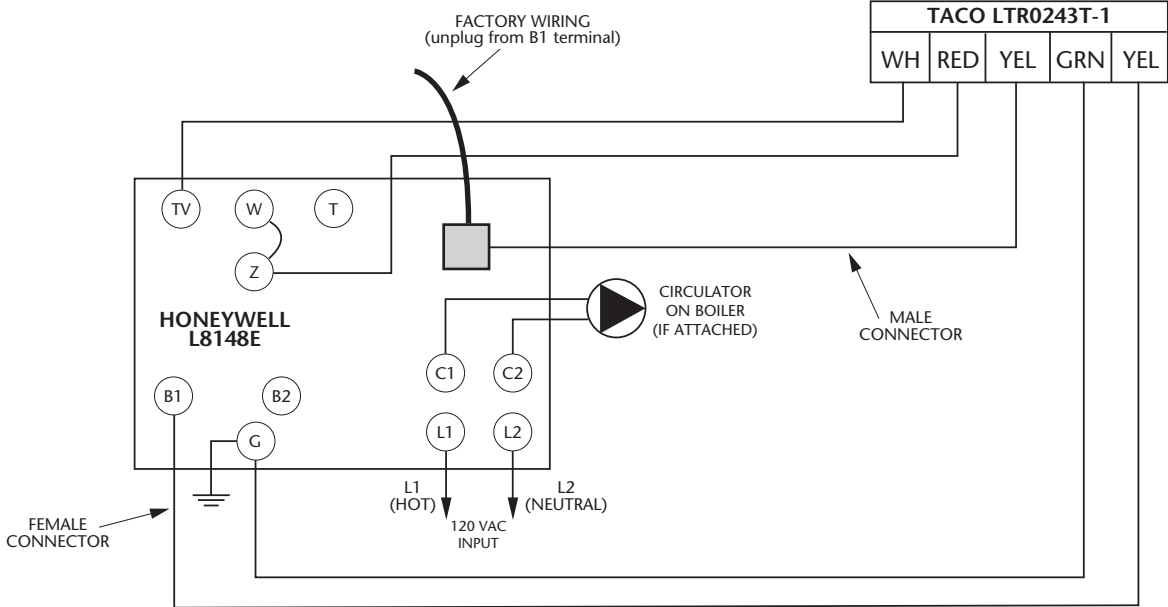


Wiring for Boilers with Honeywell Aquastat Model L8124E or Equivalent



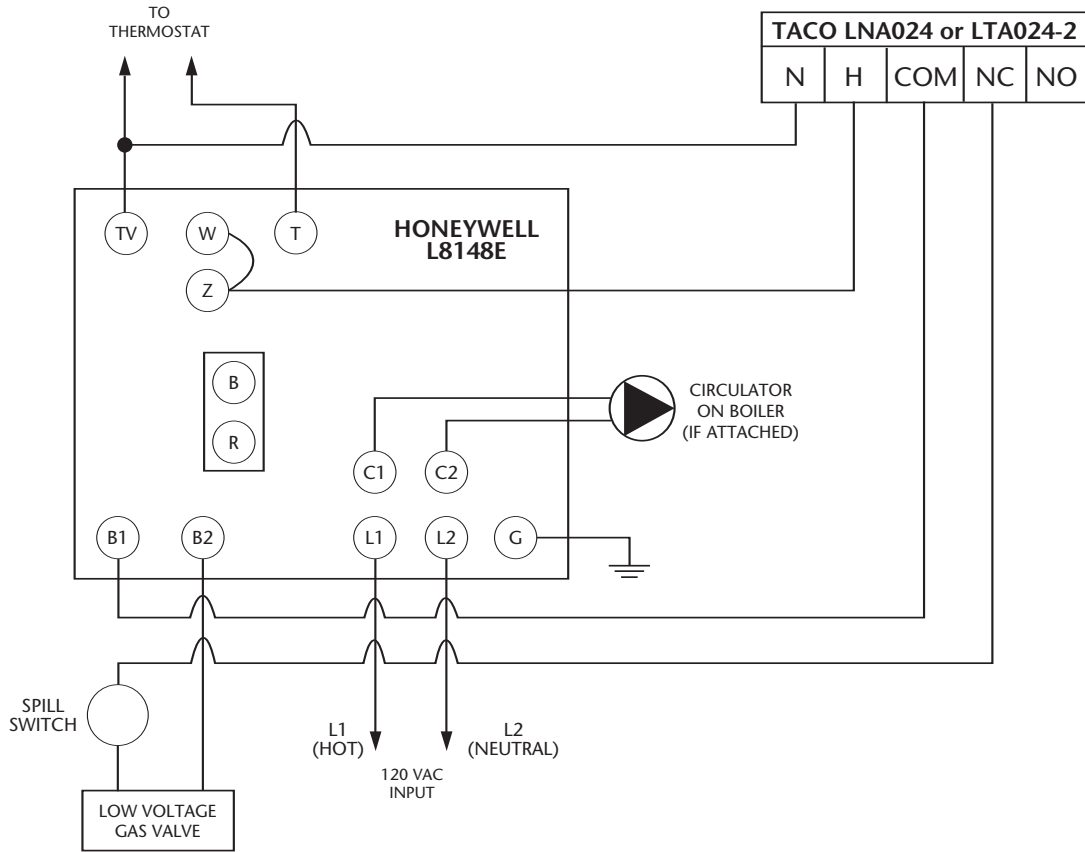
NOTE: The green wire must be connected to a ground source electrically common to the boiler ground.

Wiring for Boilers with Honeywell Aquastat Model L8148E or Equivalent

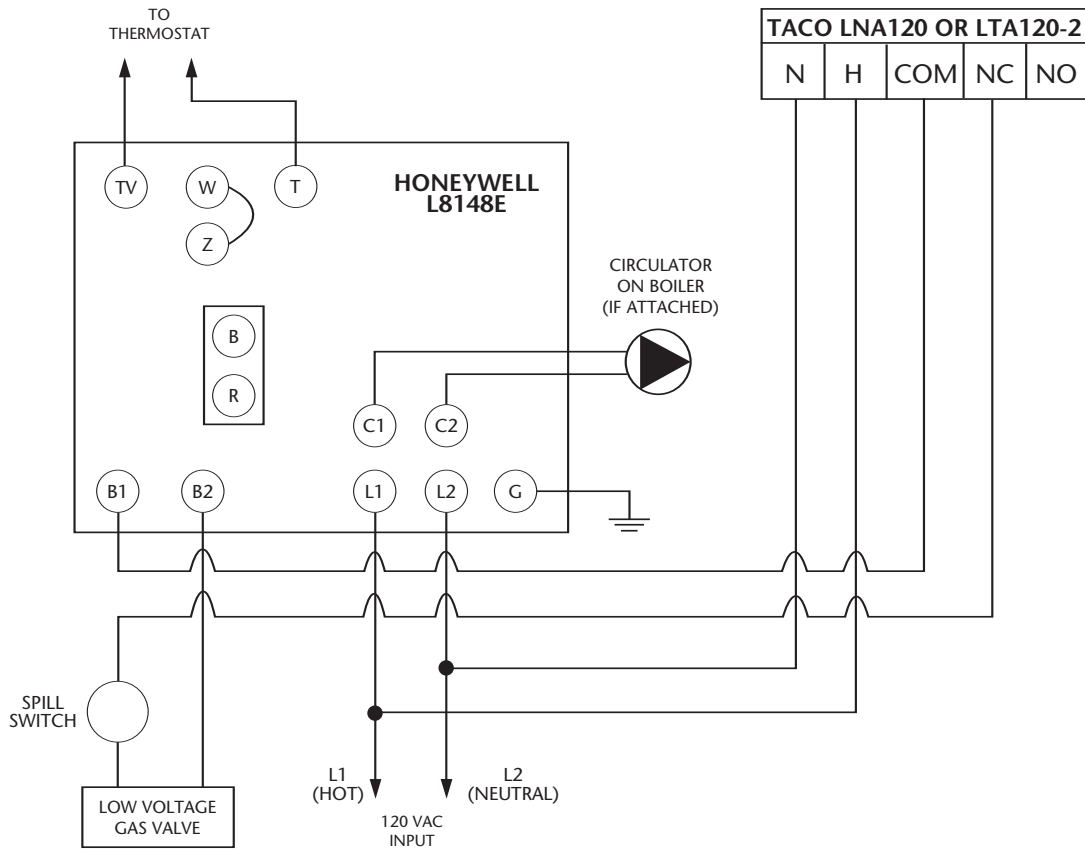


NOTE: The green wire must be connected to a ground source electrically common to the boiler ground.

Aquastat Wiring to 24VAC Low Water Cutoff



Aquastat Wiring to 120VAC Low Water Cutoff





Instruction Sheet

SR501 Switching Relay

Features:

- External Indicator Lights
- Universal Replaceability
- Snap-in PC Board
- Simplified Wiring
- Fully Enclosed Snap-Out Relays
- 100% Factory Tested
- Contractor Friendly PC Board Layout
- Universal Thermostat Compatibility
- UL Approved
- Extended 3 Year Warranty
- Made in the USA

Operation:

Connect a thermostat to the "T T" terminals on the switching relay. When the thermostat calls for heat, the relay is energized and power is given to the circulator.

Power Input:

Connect 120 volt ac power to terminals N and H.

Jumper Placement:

The jumper is factory installed between terminals H and 3 to switch power on terminals 4 n/o and 4 n/c.

External Diagnostics:

The External 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 is energized.

The Taco Connection:

Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the "00" family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

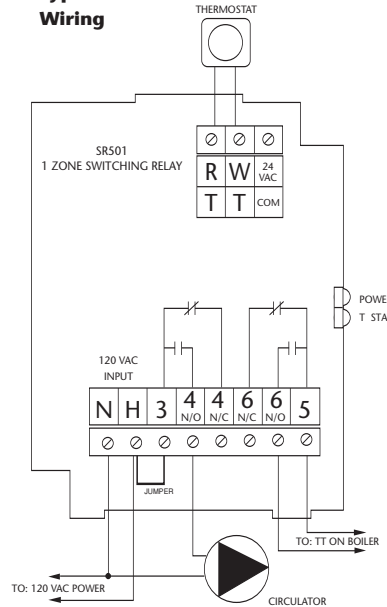
Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	TRANSFORMER VOLTAGE	MAXIMUM COMBINED LOAD	DIMENSIONS OF ENCLOSURE
				WIDTH HEIGHT DEPTH
SR501	1 Zone	120 VAC Input	7.2 amps	4 1/4" 5 1/4" 2 3/4"

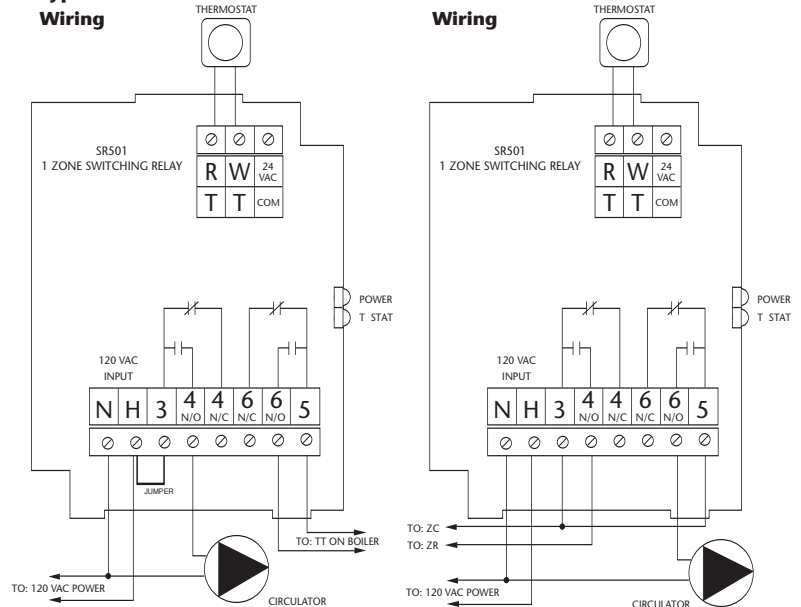
All Switching Relays are relay type DPDT, have a thermostat current of .18, and have a single phase motor rating per zone of 1/3 hp (7.2A) @ 120 VAC.

Warning: Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Typical Wiring



Alternative Wiring



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.

Terminal Description:

- T & T Thermostat Connection
- COM Common side of transformer, to power some setback thermostats
- N Neutral wire of power input
- H Hot wire of power input
- 3 Common terminal for 4 n/o and 4 n/c
- 4 n/o Normally open terminal
- 4 n/c Normally closed terminal
- 6 n/c Normally closed terminal
- 6 n/o Normally open terminal
- 5 Common terminal for 6 n/o and 6 n/c

TACO SR501 REPLACEMENT CROSS-REFERENCE

MANUFACTURER	MODEL	CONNECTIONS										
		H	N	3	4 NO	4 NC	5	6 NO	6 NC	R/T	W/T	C
Taco	SR501											
	Argo	AR821	1	2	3	4		5	6		T	
	AR822	L1	L2	3	4 NO	4 NC	5	6 NO	6 NC	R/T	G/T	C
Colombus	MR10	L1	L2	3	4 NO	4 NC	5	6 NO	6 NC	R/T	G/T	C
Erie	SR100	L1	L2	3	4 NO	4 NC	5	6 NO	6 NC	R/T	G/T	C
Honeywell	RA89A	1	2	3	4					T	T	
	RA832A	1	2	3	4		X	X		T	T	
	R845A	1	2	3	4			5	6		T	T
White-Rogers	889-189	1	2	3	4						T	T
	829-845	1	2	3	4			5	6		T	T

Do it Once. Do it Right.®

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
 TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

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

Printed in USA
 Copyright 2005
 TACO, Inc.



Instruction Sheet

SR501-845RP Universal Replacement Relay

Features:

- Universal Replaceability
- Indicator Lights
- Snap-in PC Board to Existing Enclosure
- Simplified Wiring
- Fully Enclosed Snap-Out Relay
- 100% Factory Tested
- Universal Thermostat Compatibility
- UL Approved
- Extended 3 Year Warranty
- Made in the USA

Operation:

Connect a thermostat to the "T T" terminals on the switching relay. When the thermostat calls for heat, the relay is energized and power is given to the circulator.

Power Input:

Connect 120 volt ac power to terminals L1 and L2.

Jumper Placement:

The jumper is factory installed between terminals L1 and 3 to switch power on terminal 4.

Diagnostics:

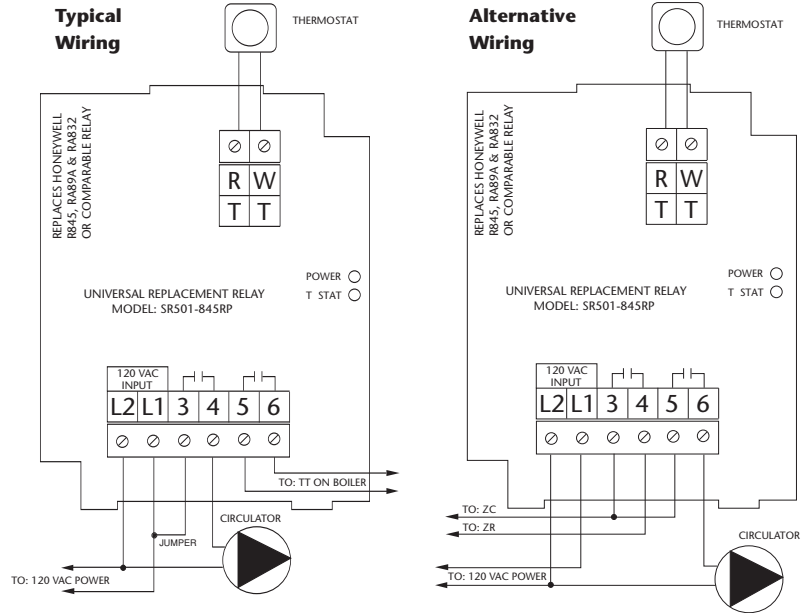
The Indicator lights show full functionality of the switching relay. The green light should always be on, indicating that power is connected. When the thermostat calls for heat, both the appropriate circulator and red indicating light is energized.

The Taco Connection:

Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the "00" family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

Terminal Description:

- T & T Thermostat Connection
- L2 Neutral wire of power input
- L1 Hot wire of power input
- 3 Common terminal for 4
- 4 Normally open terminal
- 6 Normally open terminal
- 5 Common terminal for 6



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.

Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	TRANSFORMER VOLTAGE	MAXIMUM COMBINED LOAD	DIMENSIONS OF ENCLOSURE WIDTH	HEIGHT	DEPTH
SR501-845RP	1 Zone	120 VAC Input	7.2 amps	4 1/4"	5 1/4"	2 3/4"

All Switching Relays are relay type DPDT, have a thermostat current of .18, and have a single phase motor rating per zone of 1/3 hp (7.2A) @ 120 VAC.

TACO SR501-845RP REPLACEMENT CROSS-REFERENCE								
MANUFACTURER	MODEL	CONNECTIONS						
Taco	SR501-845RP	L1	L2	3	4	5	6	R/T W/T
Argo	AR821	1	2	3	4	5	6	T
	AR822	L1	L2	3	4 NO	5	6 NO	R/T G/T
Colombus	MR10	L1	L2	3	4 NO	5	6 NO	R/T G/T
Erie	SR100	L1	L2	3	4 NO	5	6 NO	R/T G/T
Honeywell	RA89A	1	2	3	4			T T
	RA832A	1	2	3	4	X	X	T T
	R845A	1	2	3	4	5	6	T T
White-Rogers	889-189	1	2	3	4			T T
	829-845	1	2	3	4	5	6	T T

Warning: Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Do it Once. Do it Right.®

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
 TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

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

Printed in USA

Copyright 2005

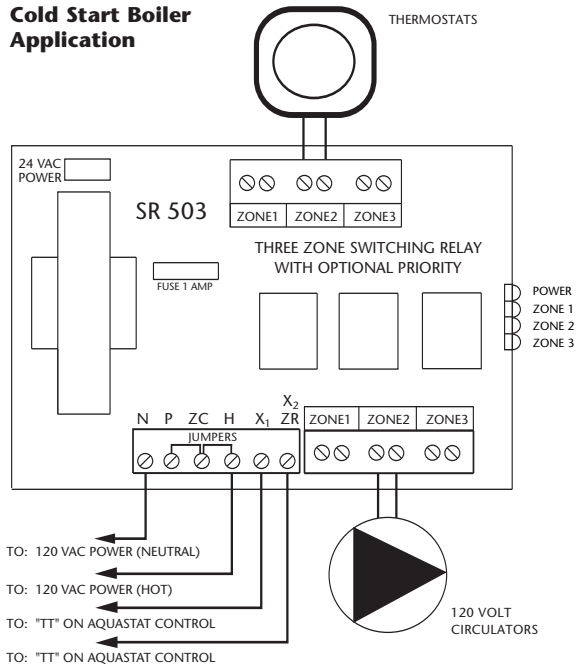
TACO, Inc.



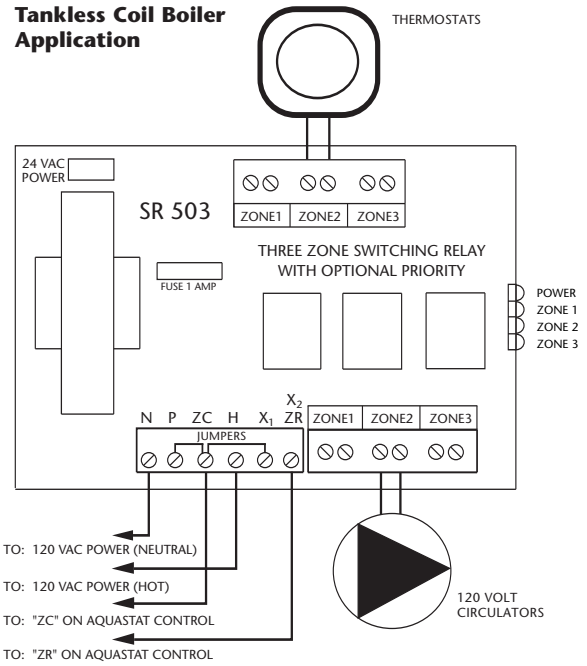
Instruction Sheet

SR502 & SR503 Switching Relay

Cold Start Boiler Application



Tankless Coil Boiler Application



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.

Operation: When the thermostat calls for heat, the appropriate circulator is energized and the isolated end switch (X₁ and X₂) will start the boiler.

Jumper Placement: The jumper should be placed between terminals ZC and H. Connect the isolated end switch, X₁ and X₂ to the boiler aquastat control. **For zone 1 priority, remove jumper between terminals P and ZC.**

Power Input: Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

The Taco Connection:

Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the "00" family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

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 is energized.

Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	TRANSFORMER VOLTAGE	MAXIMUM COMBINED LOAD	DIMENSIONS OF ENCLOSURE		
				WIDTH	HEIGHT	DEPTH
SR502	2 with Priority	120 VAC Input	15 amps	10 1/4"	6 3/4"	2 3/4"
SR503	3 with Priority	120 VAC Input	15 amps	10 1/4"	6 3/4"	2 3/4"

All Switching Relays are relay type DPST, have a thermostat current of .18, and have a single phase motor rating per zone of 1/3 hp (7.2A) @ 120 VAC.

Operation: When any thermostat calls for heat, the boiler and appropriate circulator are energized when the boiler temperature is above the set low limit.

Jumper Placement: A jumper should be placed between terminals ZC and X₁. Connect terminal ZC to ZC terminal on the aquastat control. Connect terminal ZR to ZR terminal on the aquastat control. Confirm polarity is consistent between boiler aquastat and switching relay. **For zone 1 priority, remove jumper between terminals P and ZC.**

Power Input: Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

Features:

- External Indicator Lights
- Priority
- Simplified Wiring
- Fully Enclosed Snap-Out Relays
- Compact Design
- Fuse Protected
- 100% Factory Tested
- Isolated End Switch
- Contractor Friendly PC Board Layout
- Universal Thermostat Compatibility
- UL Approved
- 24 volt Power Input or Output Terminal
- Extended 3 Year Warranty
- Made in the USA

Warning: Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Do it Once. Do it Right.®

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

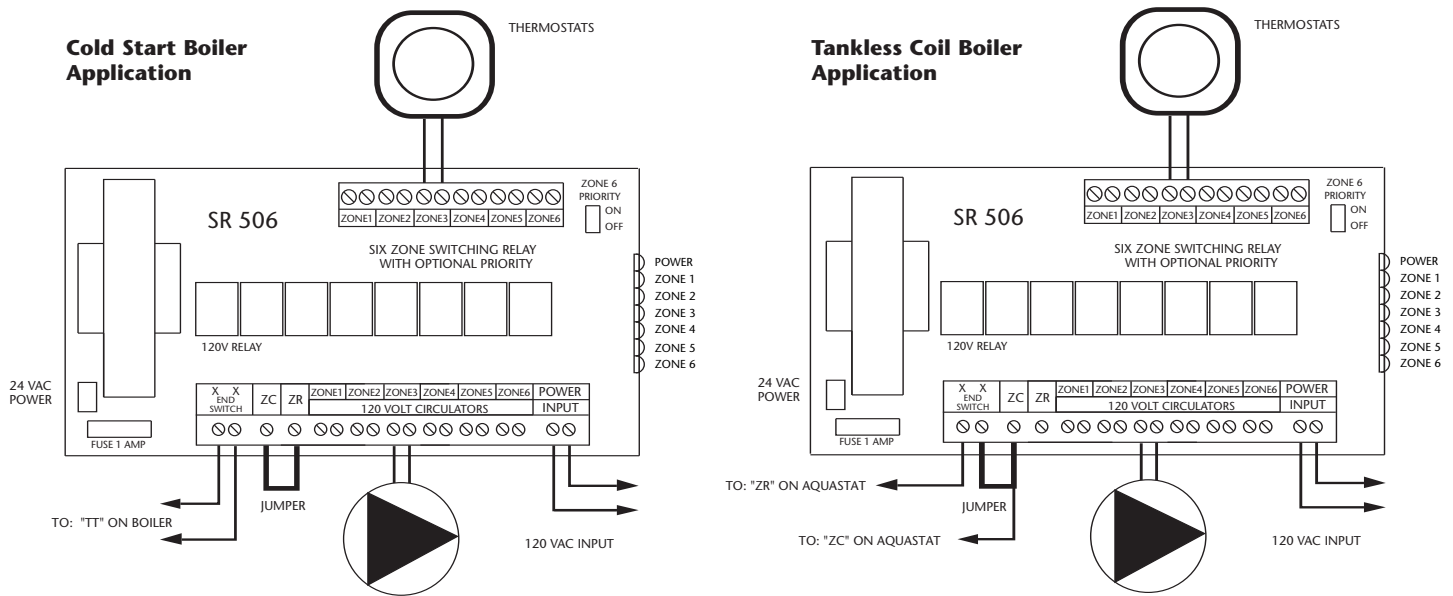
Visit our web site at: <http://www.taco-hvac.com>

Printed in USA
 Copyright 2005
 TACO, Inc.



Instruction Sheet

SR504 & SR506 Switching Relay



Warning: When using Alternative Wiring diagram, wiring instructions must be followed so power originates from the boiler. 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.

Operation: When any thermostat calls for heat, the appropriate circulator is energized and the isolated end switch (X and X) will start the boiler.

Priority Operation: When zone 6 is switched to the priority setting and is actuated, all other zones will stop operation until zone 6 is satisfied. When zone 6 is not switched to priority, all zones will operate independently.

Jumper Placement: The jumper should be placed between terminals ZC and ZR. Connect the isolated end switch to the aquastat control on the boiler.

Power Input: Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

The Taco Connection:

Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the "00" family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

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 is energized.

Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	TRANSFORMER VOLTAGE	MAXIMUM COMBINED LOAD	DIMENSIONS OF ENCLOSURE		
				WIDTH	HEIGHT	DEPTH
SR504	4 with Priority	120 VAC Input	20 amps	10 1/4"	6 3/4"	2 3/4"
SR506	6 with Priority	120 VAC Input	20 amps	11 3/4"	7 1/2"	3"

All Switching Relays are relay type DPST, have a thermostat current of .18, and have a single phase motor rating per zone of 1/3 hp (7.2A) @ 120 VAC.

Operation: When any thermostat calls for heat, the boiler and appropriate circulator are energized when the boiler temperature is above the set low limit.

Priority Operation: When zone 6 is switched to the priority setting and is actuated, all other zones will stop operation until zone 6 is satisfied. When zone 6 is not switched to priority, all zones will operate independently.

Jumper Placement: MOVE the jumper between terminals ZC and ZR to end switch X and ZC. Connect terminal ZC to ZC terminal on the aquastat control. Connect the other end switch X to ZR terminal on the aquastat control. Confirm polarity is consistent between boiler aquastat and switching relay.

Power Input: Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

Features:

- External Indicator Lights
- Switchable Priority
- Simplified Wiring
- Fully Enclosed Snap-Out Relays
- Compact Design
- Fuse Protected
- 100% Factory Tested
- Isolated End Switch
- Contractor Friendly PC Board Layout
- Universal Thermostat Compatibility
- UL Approved
- 24 volt Power Input or Output Terminal
- Extended 3 Year Warranty
- Made in the USA

Warning: Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Do it Once. Do it Right.®

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
 TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

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

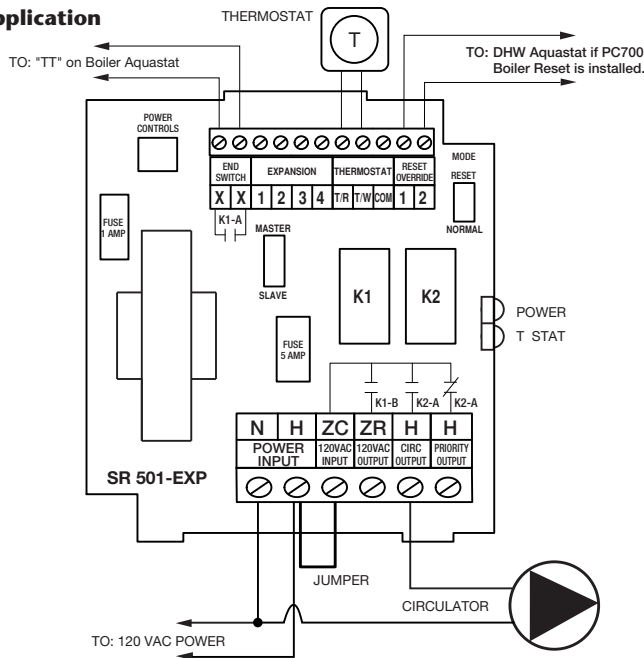
Printed in USA
 Copyright 2005
 TACO, Inc.



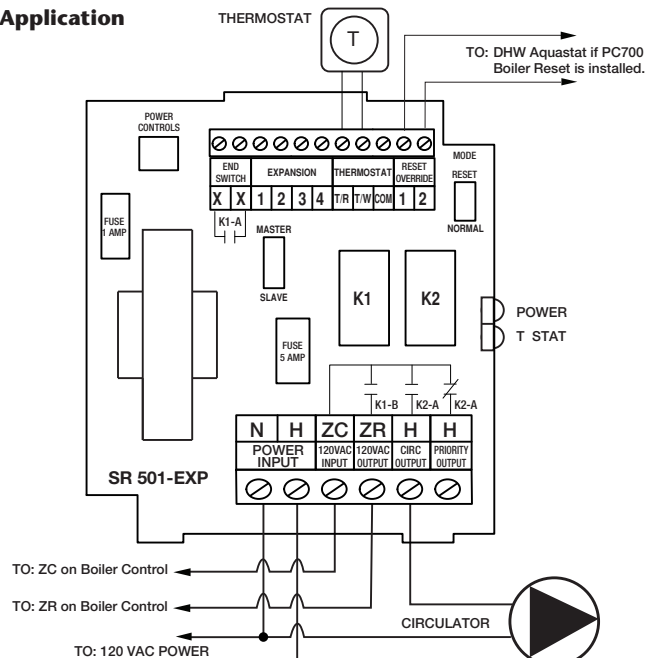
Instruction Sheet

SR501-EXP Switching Relay

Cold Start Boiler Application



Tankless Coil Boiler Application



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.

Operation: When the thermostat calls for heat, the appropriate circulator is energized and the isolated end switch (X and X) will start the boiler. Priority Output has power all the time, except when the thermostat is calling.

Mode Operation: When the mode switch is set to NORMAL, the end switch relay will be energized if any zone is in operation. When the 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.

Jumper Placement: The jumper should be placed between terminals ZC and H. Connect the isolated end switch to the aquastat control on the boiler.

Power Input: Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

Expansion Connections: Set the expansion switch to MASTER on the switching relay that has the designated priority zone or is utilizing the PowerPort options. Set all other daisy chained controls to SLAVE. Connect thermostat wire (18-22 gauge) between terminals 1, 2, 3, 4 on the master control to the corresponding 1, 2, 3, 4 on the SLAVE control(s). Controls may be daisy chained up to 20 zones using any combination of -EXP controls.

Features: External Indicator Lights
Ideal for Retrofitting
Priority Output
Simplified Wiring
Add-On Power Controls
Sealed Relays
Compact Design
Fuse Protected
100% Factory Tested
Isolated End Switch

Expandable to 20 Zones
Contractor Friendly PC Board Layout
Universal Thermostat Compatibility
UL Approved
24 volt Power Input or Output Terminal
Extended 3 Year Warranty
Made in the USA

Operation: When the thermostat calls for heat, the appropriate circulator is energized when the boiler's aquastat is above the set low limit. The ZR (120VAC) output will signal the boiler to start. Priority Output has power all the time, except when the thermostat is calling.

Mode Operation: When the mode switch is set to NORMAL, the end switch relay will be energized if any zone is in operation. When the 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.

Jumper Placement: REMOVE the jumper between terminals ZC and H. Connect terminal ZC to ZC terminal on the aquastat control. Connect terminal ZR to ZR terminal on the aquastat control. Confirm polarity is consistent between boiler aquastat and switching relay.

Power Input: Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

Expansion Connections: Set the expansion switch to MASTER on the switching relay that has the designated priority zone or is utilizing the PowerPort options. Set all other daisy chained controls to SLAVE. Connect thermostat wire (18-22 gauge) between terminals 1, 2, 3, 4 on the master control to the corresponding 1, 2, 3, 4 on the SLAVE control(s). Controls may be daisy chained up to 20 zones using any combination of -EXP controls.

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	POWER CONTROLS	TRANSFORMER VOLTAGE	MAXIMUM COMBINED LOAD	DIMENSIONS OF ENCLOSURE WIDTH	HEIGHT	DEPTH
SR501-EXP	1	1	120 VAC Input	5.0 amps	4 1/4"	5 1/4"	2 3/4"

All Switching Relays are relay type DPDT, have a thermostat current of .18, and have a single phase motor rating per zone of 1/3 hp (5.0A) @ 120 VAC.

Warning: Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only with a minimum temperature rating of 60/75°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.®

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

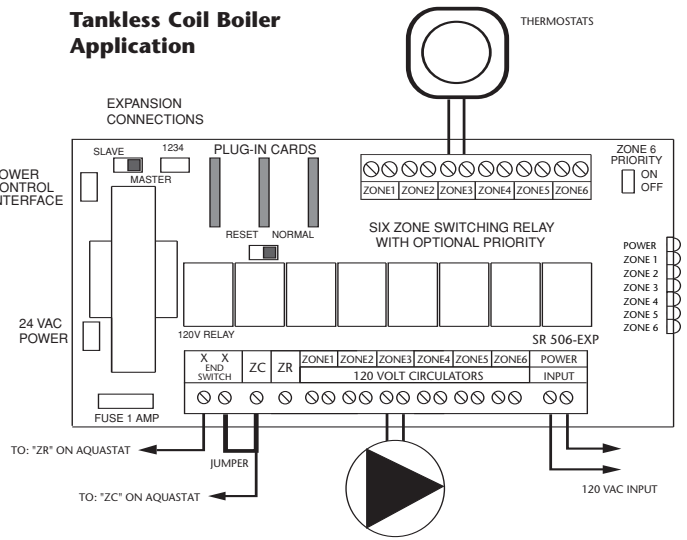
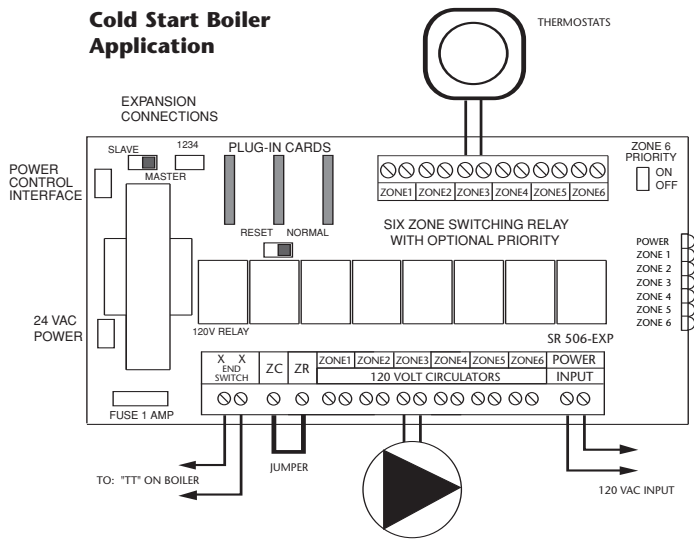
Visit our web site at: <http://www.taco-hvac.com>

Printed in USA
Copyright 2005
TACO, Inc.



Instruction Sheet

SR503-EXP, SR504-EXP & SR506-EXP Switching Relay



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.

Operation: When any thermostat calls for heat, the appropriate circulator is energized and the isolated end switch (X and X) will start the boiler.

Priority Operation: When zone 6 is switched to the priority setting and is actuated, all other zones will stop operation until zone 6 is satisfied. When zone 6 is not switched to priority, all zones will operate independently.

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

Jumper Placement: The jumper should be placed between terminals ZC and ZR. Connect the isolated end switch to the aquastat control on the boiler.

Power Input: Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

Expansion Connections: Set the expansion switch to MASTER on the switching relay that has the designated priority zone or is utilizing the PowerPort options. Set all other daisy chained controls to SLAVE. Connect thermostat wire (18-22 gauge) between terminals 1, 2, 3, 4 on the master control to the corresponding 1, 2, 3, 4 on the SLAVE control(s). Controls may be daisy chained up to 20 zones using any combination of -EXP controls.

Operation: When any thermostat calls for heat, the boiler and appropriate circulator are energized when the boiler temperature is above the set low limit.

Priority Operation: When zone 6 is switched to the priority setting and is actuated, all other zones will stop operation until zone 6 is satisfied. When zone 6 is not switched to priority, all zones will operate independently.

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

Jumper Placement: MOVE the jumper between terminals ZC and ZR to end switch X and ZC. Connect terminal ZC to ZC terminal on the aquastat control. Connect the other end switch X to ZR terminal on the aquastat control. Confirm polarity is consistent between boiler aquastat and switching relay.

Power Input: Connect 120 volt ac power input to terminals N and H. Neutral wire to terminal N. Hot wire to terminal H.

Expansion Connections: Set the expansion switch to MASTER on the switching relay that has the designated priority zone or is utilizing the PowerPort options. Set all other daisy chained controls to SLAVE. Connect thermostat wire (18-22 gauge) between terminals 1, 2, 3, 4 on the master control to the corresponding 1, 2, 3, 4 on the SLAVE control(s). Controls may be daisy chained up to 20 zones using any combination of -EXP controls.

- Features:** External Indicator Lights
 Plug-In PowerPort Cards
 Switchable Priority
 Simplified Wiring
 Add-On Power Controls
 Fully Enclosed Snap-Out Relays
 Compact Design
 Fuse Protected
 100% Factory Tested

- Isolated End Switch
 Expandable to 20 Zones
 Contractor Friendly PC Board Layout
 Universal Thermostat Compatibility
 UL Approved
 24 volt Power Input or Output Terminal
 Extended 3 Year Warranty
 Made in the USA

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 is energized.

Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	POWER PORTS	TRANSFORMER VOLTAGE	MAXIMUM COMBINED LOAD	DIMENSIONS OF ENCLOSURE		
					WIDTH	HEIGHT	DEPTH
SR503-EXP	3 with Priority	3	120 VAC Input	20 amps	10 1/4"	6 3/4"	2 3/4"
SR504-EXP	4 with Priority	3	120 VAC Input	20 amps	10 1/4"	6 3/4"	2 3/4"
SR506-EXP	6 with Priority	3	120 VAC Input	20 amps	11 3/4"	7 1/2"	3"

All Switching Relays are relay type DPST, have a thermostat current of .18, and have a single phase motor rating per zone of 1/3 hp (7.2A) @ 120 VAC.

Warning: Wiring connections must be made in accordance with all applicable electrical codes and these instructions. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Do it Once. Do it Right.®

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
 TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

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

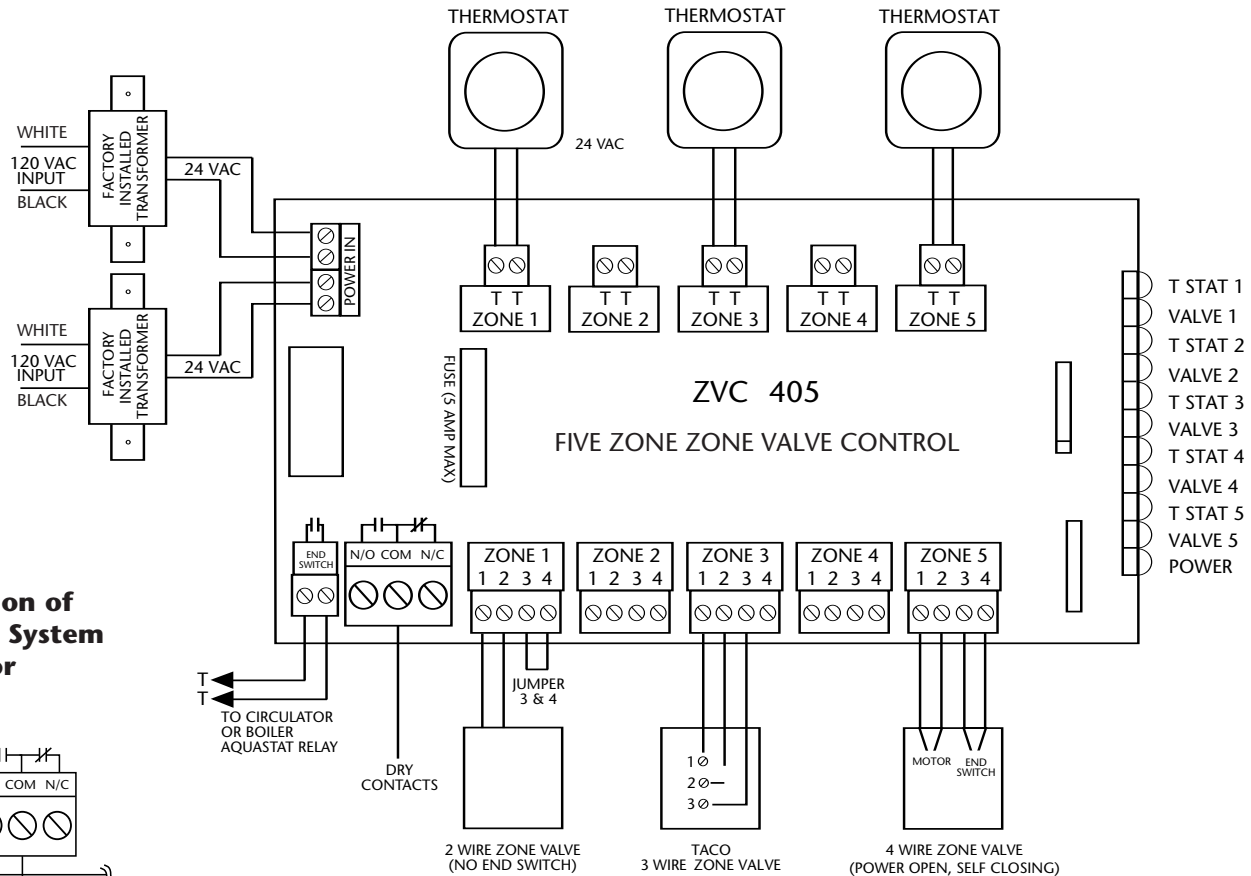
Printed in USA
 Copyright 2005
 TACO, Inc.



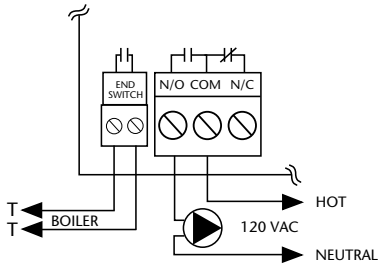
Instruction Sheet

ZVC403 & ZVC405 Zone Valve Control

Wiring Diagram



Installation of Optional System Circulator



Operation/External Diagnostics: When any thermostat calls for heat, the appropriate zone valve is energized and the yellow light goes on. When the zone valve is fully open, the red light goes on and energizes the end switch relay. The green light should always be on, indicating that power is connected.

The Taco Connection: Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the "00" family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

Warning: Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	TRANSFORMER VOLTAGE	MAX OUTPUT AT 24 VAC	DIMENSIONS OF ENCLOSURE
				WIDTH HEIGHT DEPTH
ZVC403	3 Zone	120 VAC Input	40 VA	10 1/4" 6 3/4" 2 3/4"
ZVC405	5 Zone	120 VAC Input	80 VA	11 3/4" 7 1/2" 3"

All Zone Valve Controls are relay type DPDT and have a single phase motor rating per zone of 1/8 hp (5A) @ 120 VAC.

Features:

- External Indicator Lights
- Simplified Wiring
- Works with 2, 3, or 4-Wire Zone Valves
- Compact Design
- Fuse Protected
- 100% Factory Tested
- Isolated End Switch
- Extra Set of Dry Contacts
- Contractor Friendly PC Board Layout
- Universal Thermostat Compatibility
- UL Approved
- Sturdy Screw Connections
- Extended 3 Year Warranty
- Made in the USA

Do it Once. Do it Right.

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

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

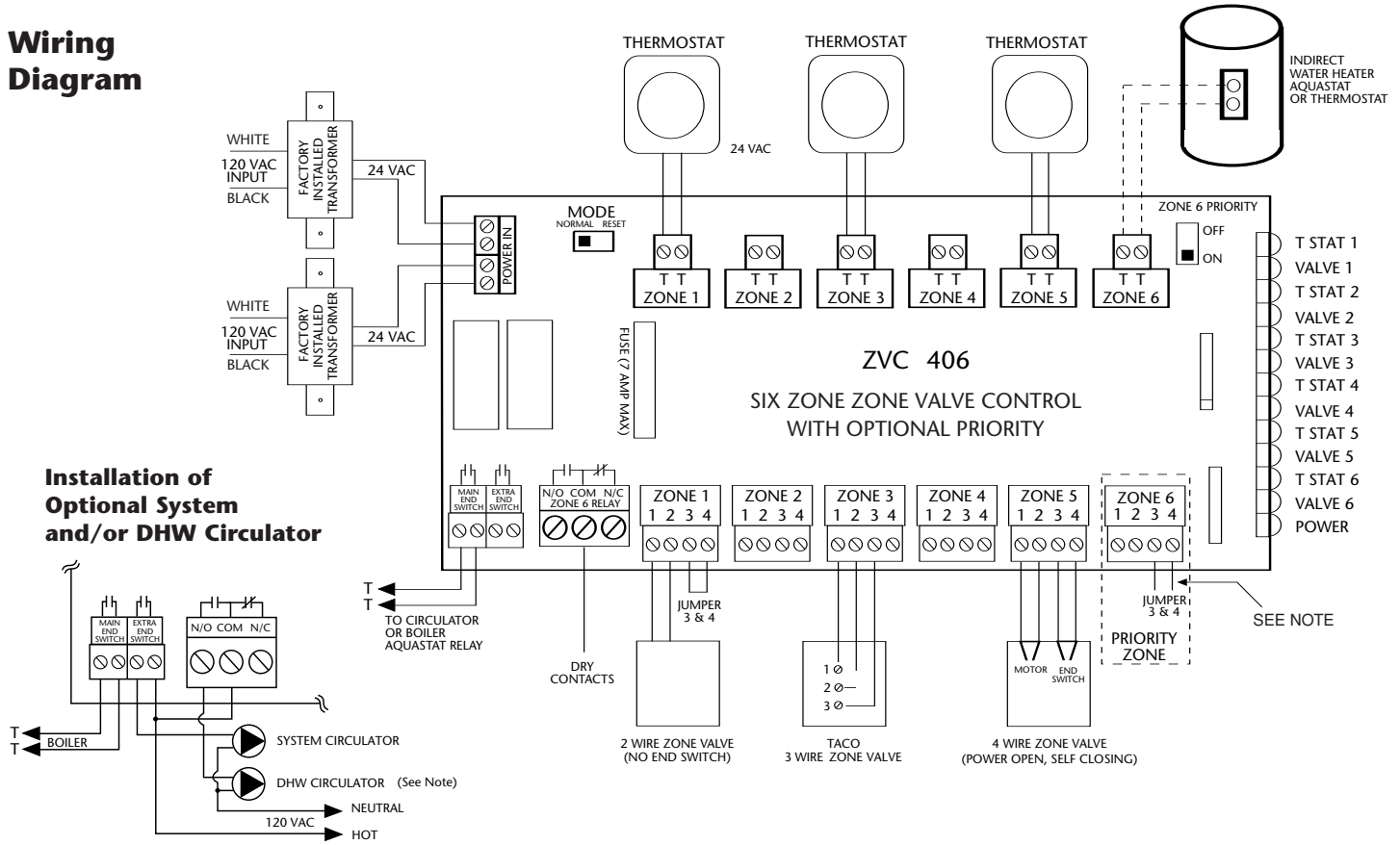
Printed in USA
 Copyright 2000
 TACO, Inc.



Instruction Sheet

ZVC404 & ZVC406 Zone Valve Control

Wiring Diagram



Installation of Optional System and/or DHW Circulator

Operation/External Diagnostics: When any thermostat calls for heat, the appropriate zone valve is energized and the yellow light goes on. When the zone valve is fully open, the red light goes on and energizes the end switch relay. The green light should always be on, indicating that power is connected.

Priority Operation: When zone 6 is switched to the priority setting and is actuated, all other zones will stop operation until zone 6 is satisfied. When zone 6 is not switched to priority, all zones will operate independently. **Note:** When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

Mode Operation: When the mode switch is set to NORMAL, the end switch relay will be energized if any zone is in operation. When the switch is set to RESET, the end switch relay will only be energized if priority zone is in operation.

The Taco Connection: Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the "00" family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	TRANSFORMER VOLTAGE	MAX OUTPUT AT 24 VAC	DIMENSIONS OF ENCLOSURE		
				WIDTH	HEIGHT	DEPTH
ZVC404	4 with Priority	120 VAC Input	40 VA	10 1/4"	6 3/4"	2 3/4"
ZVC406	6 with Priority	120 VAC Input	80 VA	11 3/4"	7 1/2"	3"

All Zone Valve Controls are relay type DPDT and have a single phase motor rating per zone of 1/2 hp (5A) @ 120 VAC.

- Features:**
- External Indicator Lights
 - Switchable Priority
 - Simplified Wiring
 - Works with 2, 3, or 4-Wire Zone Valves
 - Compact Design
 - Fuse Protected
 - 100% Factory Tested
 - Isolated End Switch
 - Extra Set of Dry Contacts
 - Contractor Friendly PC Board Layout
 - Universal Thermostat Compatibility
 - UL Approved
 - Sturdy Screw Connections
 - Extended 3 Year Warranty
 - Made in the USA

Warning: Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

Do it Once. Do it Right.

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.
 Visit our web site at: <http://www.taco-hvac.com>

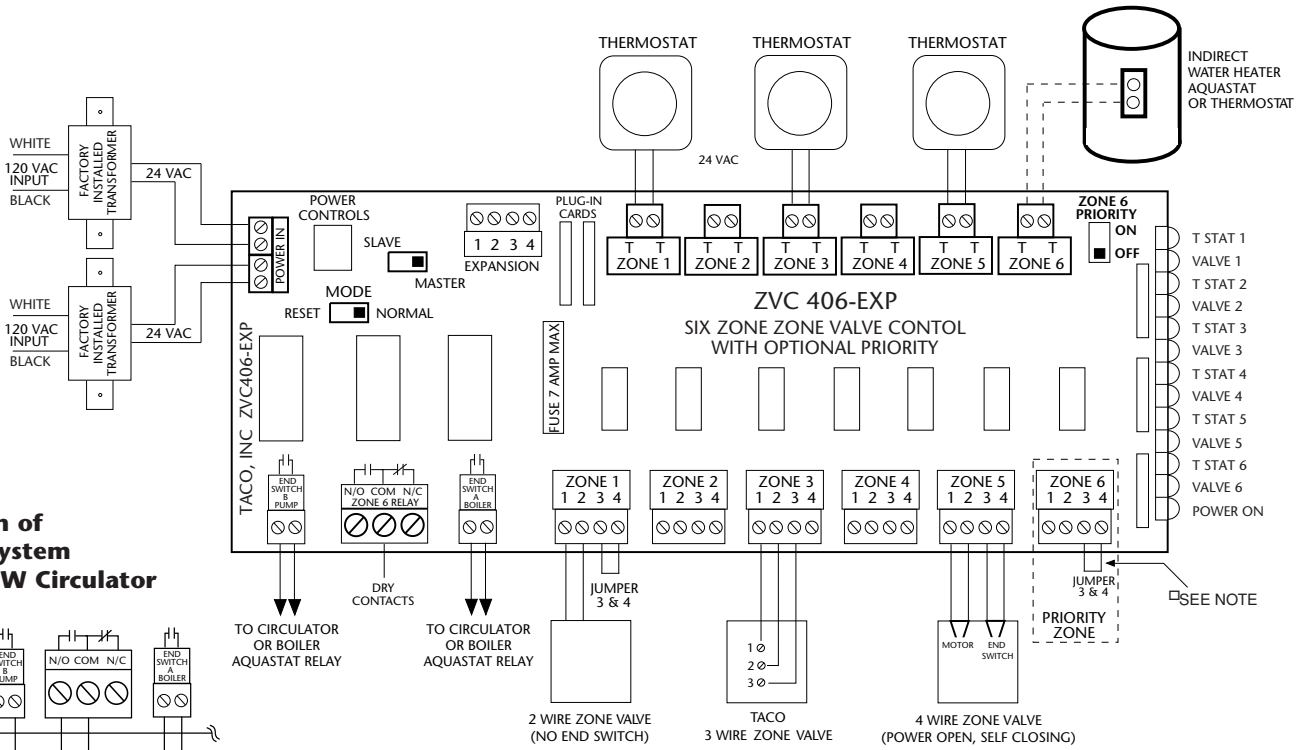
Printed in USA
 Copyright 2000
 TACO, Inc.



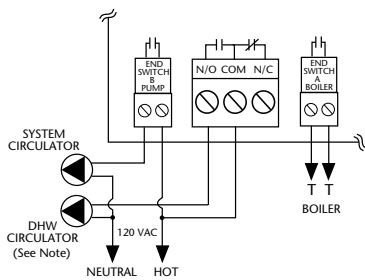
Instruction Sheet

ZVC404-EXP & ZVC406-EXP Zone Valve Control

Wiring Diagram



Installation of Optional System and/or DHW Circulator



Operation/External Diagnostics: When any thermostat calls for heat, the appropriate zone valve is energized and the yellow light goes on. When the zone valve is fully open, the red light goes on and energizes the end switch relays. The green light should always be on, indicating that power is connected.

Priority Operation: When zone 6 is switched to the priority setting and is actuated, all other zones will stop operation until zone 6 is satisfied. When zone 6 is not switched to priority, all zones will operate independently. **Note:** When a circulator is used on the priority zone instead of a zone valve, jumper 3 and 4 of the priority zone.

Mode Operation: When the mode switch is set to NORMAL, both end switch relays will be energized if any zone is in operation. When the mode switch is set to RESET, the end switch relay "A" will only be energized when the priority zone is in operation. The end switch relay "B" will be energized when any zone is in operation.

Power Input: Connect 120 volt ac power input to leads on transformer. Neutral to white wire. Hot to black wire.

Expansion Connections: Set the expansion switch to MASTER on the zone valve control that has the designated priority zone or is utilizing the PowerPort options. Set all other daisy chained controls to SLAVE. Connect thermostat wire (18-22 gauge) between terminals 1, 2, 3, 4 on the master control to the corresponding 1, 2, 3, 4 on the SLAVE control(s). Controls may be daisy chained up to 20 zones using any combination of Switching Relay -EXP or Zone Valve -EXP controls.

Warning: Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.

The Taco Connection: Combine the reliability of the Taco Zone Valves, Priority Zoning Circulators, Thermostats, and the "00" family of circulators with the advanced features of the Taco Zone Controls to achieve total system integration. No matter the application, Taco now provides the products to maximize system performance while simplifying both installation and service.

Specifications:

PRODUCT NUMBER	NUMBER OF ZONES	TRANSFORMER VOLTAGE	MAX OUTPUT AT 24 VAC	DIMENSIONS OF ENCLOSURE	WIDTH	HEIGHT	DEPTH
ZVC404-EXP	4 with Priority	120 VAC Input	80 VA	11 ³ / ₄ "	7 ¹ / ₂ "	3"	
ZVC406-EXP	6 with Priority	120 VAC Input	80 VA	11 ³ / ₄ "	7 ¹ / ₂ "	3"	

All Zone Valve Controls are relay type DPDT and have a single phase motor rating per zone of 1/8 hp (5A) @ 120 VAC.

Features:

- External Indicator Lights
- Plug-In PowerPort Cards
- Switchable Priority
- Simplified Wiring
- Add-On Power Controls
- Works with 2, 3, or 4-Wire Zone Valves
- UL Approved
- Fuse Protected
- 100% Factory Tested

- Isolated End Switch
- Expandable to 20 Zones
- Extra Set of Dry Contacts
- Contractor Friendly PC Board Layout
- Universal Thermostat Compatibility
- Sturdy Screw Connections
- Extended 3 Year Warranty
- Made in the USA

Do it Once. Do it Right.

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
 TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

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

Printed in USA
 Copyright 2000
 TACO, Inc.



Instruction Sheet

Hydro Air Fan Controls

Operation HAF101 and 201:

The Hydro Air Fan Control is an interface between the thermostat and air handler. It also has an isolated end switch to start the boiler and/or pump. When the thermostat calls for heat, the Fan Control energizes the end switch relay and allows the fan to operate at low speed when the water is above the optional aquastat setting. When the thermostat calls for cooling, the Fan Control energizes the condenser and operates on high speed.

Additional HAF201 Operations:

Selectable one, three or four minute delay on fan operation in heating mode. Selectable pump exercise activates circulator but does not enable boiler contacts. Two minutes every 24 hours minimizes the chance of bacteria build-up in an open loop system. Thirty seconds every two weeks minimizes seasonal start-up problems generally associated with harsh water conditions. Optional aquastat or thermostat can be connected to Freeze Protection TT terminals to reduce the chance of pipes freezing by energizing the pump dry contacts (boiler contacts not activated).

Switch Settings (HAF201):

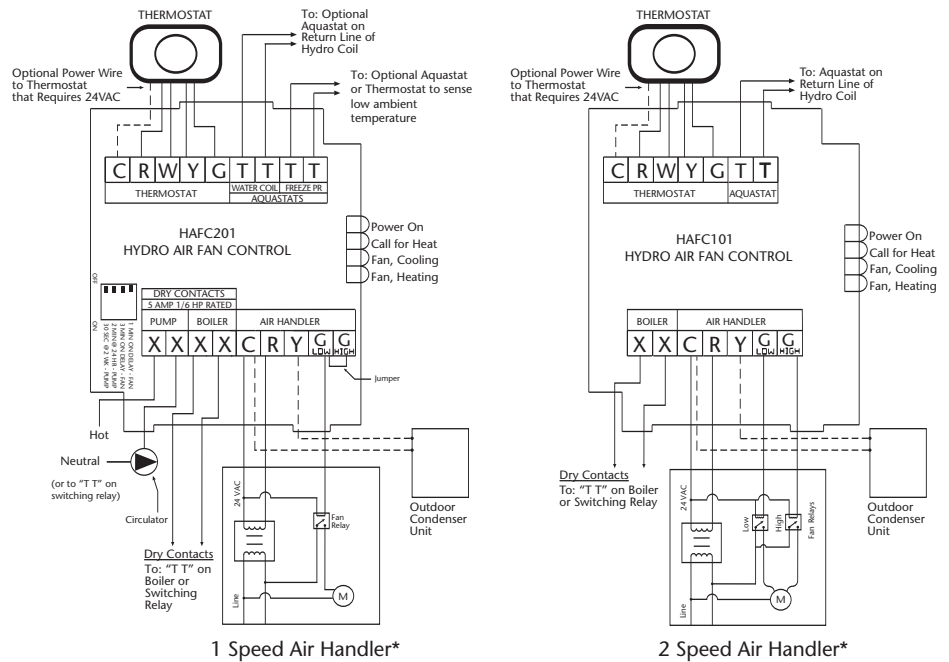
- 1 1 minute on fan delay, in heating mode
- 2 3 minute on fan delay, in heating mode
- 1&2 4 minute on fan delay, in heating mode
- 3 Pump dry contact activated for 2 minutes every 24 hours (boiler contacts not activated)
- 4 Pump dry contacts activated for 30 seconds every two weeks (boiler contacts not activated)

External Diagnostics:

The external lights show full functionality of the Hydro Air Fan Control. The green light should always be on, indicating that power is connected. Red lights indicate fan operation for heating and cooling modes.

Warning:

Wiring connections must be made in accordance with all applicable electrical codes. Use copper wire only. Failure to follow this instruction can result in personal injury or death and/or property damage. 10-18 gauge wire recommended for 120 VAC connections with 9 in.lbs. max torque, 12-22 gauge wire for thermostat connections with 9 in.lbs. max torque, and 12-22 gauge wire for 24 VAC source with 5 in.lbs. max torque.



* Both HAF101 and 201 capable of 1 and 2 speed applications

Terminal Description:

Thermostat:

- | | | | |
|---|--|---|---------------------------|
| C | Optional: Common side of transformer to power some styles of thermostats | W | White - Heating signal |
| R | Red - Hot side of transformer used to switch all functions | Y | Yellow - Condenser signal |
| | | G | Green - Fan signal |

Water Coil Aquastat:

TT Connect to aquastat at air handler to control operation of the fan when in the heating mode. Install a jumper if the aquastat is not used

Freeze Protection Aquastat:

TT Connect to aquastat or thermostat to sense low ambient temperature. Reduces the chance of pipes freezing by energizing the pump dry contacts.

Pump Dry Contacts:

XX May switch pump directly by bringing in external line voltage or connect to "T T" on a switching relay.

Boiler Dry Contacts:

XX Connect to the boiler or "T T" terminals on a switching relay.

Air Handler:

- | | |
|---|--|
| C | Common side of transformer to power the Fan Control |
| R | Red - Hot side of transformer used to switch all functions |
| Y | Yellow - Condenser signal |

One Speed Motor:

G_{low} Connect the fan to the relay. Keep the jumper installed between G_{high} and G_{low}.

Two Speed Motor:

G_{high} Remove jumper and connect G_{high} to the high speed fan relay and connect G_{low} to the low speed fan relay.

Specifications:

** Model number changed from SR501-F

PRODUCT NUMBER	NUMBER OF ZONES	POWER INPUT VOLTAGE	MAXIMUM COMBINED LOAD	RELAY TYPE	THERMOSTAT CURRENT	SINGLE PHAZE MOTOR RATING (RELAY)	DIMENSIONS OF ENCLOSURE		
							WIDTH	HEIGHT	DEPTH
HAF101**	1 Zone	24 VAC Input	5 amps	DPDT	.18	1/6 HP(5A) @120VAC	4 1/4"	5 1/4"	2 3/4"
HAF201	1 Zone	24 VAC Input	5 amps	DPDT	.18	1/6 HP(5A) @120VAC	4 1/4"	5 1/4"	2 3/4"

The Hydro Air Fan Controls are relay type DPDT, have a thermostat current of .18 and a single phase motor rating per zone of 1/6 HP (5A) @ 120 VAC.

Do it Once. Do it Right.

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.
 TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

Printed in USA
 Copyright 1999
 TACO, Inc.

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



Instruction Sheet

102-094

PC600 Post Purge Timer Plug-In PowerPort Card

SUPERSEDES: August 1, 1997

EFFECTIVE: May 1, 2000

Plant ID No. 9300-867

Operation:

Once the priority zone is satisfied, the PC600 maintains power to the circulator, but does not fire the boiler. The circulator purges excess heat into the priority zone, minimizing standby loss during warm weather months and optimizing boiler operation when used with a boiler reset control. Power can be maintained to the circulator from a minimum of 10 seconds to a maximum of 420 seconds. The power LED light is energized when the priority zone or the post purge card is in operation.

Installation:

The PC600 can be installed in any one of the PowerPort terminals located on the Taco Expandable (-EXP) Control(s). Remove the shunt/jumper between pins 9 & 10 on the PowerPort terminal before installing the PC600. Align the connector on the base of the post purge card with the PowerPort terminal on the Expandable Control and push until the two mate.

XX Terminals (Optional):

The XX terminals on the post purge card can be wired to TT on the boiler to fire only when the priority zone is calling for heat. If using a boiler with an internal reset control, wire the XX terminals in parallel with the TT connections of the internal reset control.

Do it Once. Do it Right.

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.

TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

Printed in USA

Copyright 2000

TACO, Inc.



Instruction Sheet

102-095

PC605 Priority Protection Plug-In PowerPort Card

SUPERSEDES: MAY 1, 1998

EFFECTIVE: MAY 1, 2000

PLANT ID NO. 9300-1012

Operation:

The PC605 Priority Protection Plug-In Card is a solid state control that helps prevent freeze-ups in the event of a priority zone failure. If the priority zone calls for heat continuously for more than one hour, power is returned to the space heating (non-priority) zones, allowing all zones to function independently. Once the priority zone is satisfied, the PC605's auto-reset is activated and the priority zone is again allowed to have priority for up to one hour the next time it calls. The one hour time frame is not adjustable. The red LED light is energized only when the Priority Protection Card is operating in priority override mode.

Installation:

The PC605 can be installed in any unoccupied PowerPort terminal located on the Taco Expandable (-EXP) Control(s). Do not remove the shunt between pins 9 & 10 on the Expandable Control unless a PC600 is also installed. Align the connector on the base of the priority protection card with the PowerPort terminal on the Expandable Control and push until the two mate. The PC605 can be used in conjunction with any other Taco PC style PowerPort Cards or Add-on Controls.

Do it Once. Do it Right.

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.

TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

Printed in USA

Copyright 2000

TACO, Inc.



Instruction Sheet

102-096

PC610 Pump Exercise and Timer Plug-In PowerPort Card

SUPERSEDES: May 31, 1998

EFFECTIVE: May 1, 2000

Plant ID No. 9300-1025

Operation:

The PC610 Pump Exercise and Timer Plug-In Card is a solid state universal timer designed to cycle all the pumps that are attached to the Expandable Control(s) at selected time intervals. This minimizes seasonal start-up problems generally associated with harsh water conditions. The control can be configured to reduce the chance of freeze-ups by cycling the pumps more often during cold weather months. Bacteria can be minimized in heating systems that utilize domestic hot water heaters as their heat source by systematically circulating the water.

Installation:

The PC610 can be installed in any unoccupied PowerPort terminal located on the Taco Expandable (-EXP) Control(s). Do not remove the shunt between pins 9 & 10 on the Expandable Switching Relay unless a PC600 is also installed. Align the connector on the base of the priority protection card with the PowerPort terminal on the Expandable Switching Relay and push until the two mate. The PC610 can be used in conjunction with any other Taco PC style PowerPort Cards or Add-on Controls.

Typical Settings:

Application	On Time	Off Time
Pump Exercise	30 sec.	2 weeks
Bacteria Minimization	4 min.	12 hours
Freeze Protection	4 min.	1 hour

Do it Once. Do it Right.

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.

TACO (Canada), Ltd., 6180 Ordan Drive, Mississauga, Ontario L5T 2B3. Telephone: 905/564-9422. FAX: 905/564-9436.

Printed in USA

Copyright 2000

TACO, Inc.

Standard Terms and Definitions

Switching Relay: Transformer and relay in one box, which allows a low voltage thermostat to control a line voltage load (circulator), with an isolated end switch that can energize the boiler.

Zone Valve Control: Transformer and relay in one box, which allows a low voltage thermostat to control a low voltage zone valve, with an isolated end switch that can energize the boiler and/or circulators.

Dry Contacts: Set of relay contacts that make and break, where no voltage is present. Usually can switch 24 or 120 VAC.

Isolated End Set Switch: Set of dry contacts that make when a zone calls for heat. Usually connected to a boiler's aquastat TT.

Mode Switch: Switch set to **NORMAL** – When any zone calls for heat, the end switch will make and fire the boiler.

Switch set to **RESET** – When any zone calls for heat, a heat demand signal is given to external add-on reset control and it controls boiler operation. Also when the priority zone calls for heat and is switched to priority, the end switch will override reset control and fire boiler to high limit.

TT: Where thermostat or aquastat connects on a heating control.

XX: Denotes Isolated End Switch.

Low Voltage: 24 VAC for most HVAC systems.

Line Voltage: Normally 120 VAC relative to ground.

H or L1: Hot side of line voltage.

N or L2: Neutral side of line voltage.

ZR: 120 VAC (Hot) signal from switching relay to boiler's operating aquastat to fire the burner to high limit when any zone calls for heat. Also ideal for controlling primary circulator.

ZC: 120 VAC (Hot) signal from boiler's operating aquastat to switching relay allowing circulator(s) to run when aquastat is above the set low limit.

Cold Start: A boiler that fires only when there is a call for heat.

Tankless Coil: A method of heating domestic water utilizing a heat exchanger inside a boiler. The boiler also maintains heat year round to deliver hot water on demand.

DHW Heater: A method of heating domestic water utilizing a heat exchanger and storage tank.

Transformer: A component for increasing or reducing AC voltage. Rated in VA (volts x amps).

OHMS Law: Example: A 24 volt, 40 VA transformer can produce how much current?

$$\text{Current} = \text{VA} / \text{Voltage}$$

$$40 / 24 = 1.6 \text{ Amps}$$

$$I = E/R$$

where

$$I = \text{Current in Amps}$$

$$R = E/I$$

$$R = \text{Resistance in Ohms}$$

$$E = I \times R$$

$$E = \text{Volts}$$

$$W = E \times I$$

$$W = \text{Watts or VA}$$

$$I = W(\text{VA})/E$$

RELAY CONTACTS:

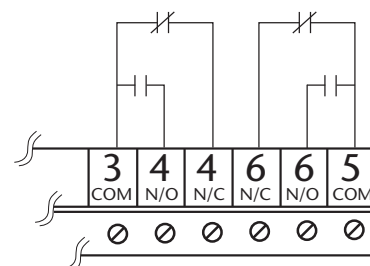
N/C: Normally closed connection of a relay, when not energized.

N/O: Normally open connection of a relay, when not energized.

Com: The common terminal for normally open and normally closed.

Pole: The number of independent circuits of a switch or relay.

Throw: The number of settings which a switch or relay can have.



DPDT = Double Pole Double Throw

TACO Zone Controls Cross-Reference

	TACO	ARGO	ERIE	HONEYWELL	WHITE-ROGERS
SWITCHING RELAYS					
1 Zone Switching Relay (DPDT)	SR501	AR821 (1), AR822	SR100	RA89A (2), RA845A (1), RA832A (1)	889-189 (2), 829-845 (1)
1 Zone Switching Relay Replacement PC Board (DTSP)	SR501-845RP				
2 Zone Switching Relay with Priority	SR502	AR-861-2 (3)	SR201		
3 Zone Switching Relay with Priority	SR503	AR-861-3 (3)	SR301	R8888A1007	
4 Zone Switching Relay with Priority	SR504	AR-842	SR601	R8888B1005	
6 Zone Switching Relay with Priority	SR506	AR-866	SR601 (4)		

SWITCHING RELAYS WITH POWERPORT OPTIONS

- 3 Zone Switching Relay with Priority and 3 Power Ports
- 4 Zone Switching Relay with Priority and 3 Power Ports
- 6 Zone Switching Relay with Priority and 3 Power Ports

ZONE VALVE CONTROLS

3 Zone Valve Control	ZVC403 (7)	ARM-861-DP (5,6), ARM-3P			
4 Zone Valve Control with Priority	ZVC404 (7)	ARM-842-DP (5,6), ARM-4P			
5 Zone Valve Control	ZVC405 (7)	ARM-866-DP (5,6), ARM-6P			
6 Zone Valve Control with Priority	ZVC406 (7)		VL500 (8) VL500 (8)	R8889A1014 R8889B1012	

ZONE VALVE CONTROLS WITH POWERPORT OPTIONS

- 4 Zone Valve Control with Priority and 2 Power Ports
- 6 Zone Valve Control with Priority and 2 Power Ports

PLUG IN POWERPORT CARDS

Post Purge Timer Plug-In Card	PC600				
Priority Protection Plug-In Card	PC605				
Universal Timer/Pump Exercise Plug-In Card	PC610	DPM-1			

TACO Zone Controls Cross-Reference (Continued)

WHITE-ROGERS

HONEYWELL

ERIE

ARGO

TACO

ADD-ON POWER CONTROLS

Boiler Reset Control
 2-Stage Boiler Reset Control
 Variable Speed Pump Injection Mixing Control

BB1200
 BB3000

DPM-2

PC700
 PC702
 PC705

FAN CONTROLS

1 Zone Hydro Air Fan Control (1 or 2 Speed)
 1 Zone Hydro Air Fan Control with Time Delays (1 or 2 Speed)

WA300

ARH-1, ARH-2, ARH-3

HAFCl01
 HAFc201

REPLACEMENT PARTS

24 Volt Replacement Relay
 120 Volt Replacement Relay

R-35
 R-49

EXP10

SR024-001RP
 SR120-001RP

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 20 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.

CONTROLS MADE EASY.[®]

TACO, INC., 1160 Cranston Street, Cranston, RI 02920 Telephone: (401) 942-8000 FAX: (401) 942-2360.

TACO (Canada), Ltd., 8450 Lawson Road, Unit #3, Milton, Ontario L9T 0J8. Telephone: 905/564-9422. FAX: 905/564-9436.

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

Printed in USA

Copyright 2010

TACO, Inc.