

Add-A-Zone™ Models AZ-1 & AZ-1X

Installation, Operation and Service Instructions

INSTALLER: PLEASE LEAVE THIS MANUAL FOR THE OWNER'S USE.

 **SAFETY INSTRUCTIONS**

This safety alert symbol will be used in this manual and on the pump safety instructions decal to draw attention to safety related instructions. When used, the safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.

DESCRIPTION

The Add-A-Zone pump controller is field mounted to any NRF, NBF, or 1/12-1/6 HP Series PL™ booster pump. The Add-A-Zone controller operates the pump when the thermostat calls for heat. The controller can be wired to fire the boiler through a 24-volt rated isolated endswitch. The Add-A-Zone relay boxes can be daisy chained to form up to a maximum of three zones. The Add-A-Zone pump controllers are UL and cUL listed. When the Add-A-Zone is mounted on a B&G pump, the pump/controller assembly maintains the UL listings.

OPERATIONAL LIMITS

For use on B&G models NRF, NBF, and 1/12-1/6 HP Series PL™ only. **Do not use with pump that has larger than 1/6 HP motor.**

Power Supply: 115-120 VAC, 60HZ, 1Ø

AZ-1 can be used power up to two AZ-1X modules.

Maximum switch current: 5 Amps



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ADD-A-ZONE INSTALLATION (AZ-1)

1. Disconnect the electrical supply to the pump before installing the Add-A-Zone controller.



WARNING: Electrical Shock Hazard

Disconnect and lock out the power before making electrical connections. Failure to follow these instructions could result in serious personal injury or death.

2. Remove the screw that holds the steel conduit box cover to the pump.
3. Remove the conduit box cover. The Add-A-Zone assembly replaces the conduit box cover.
4. If Add-A-Zone is being installed onto an already installed pump, disconnect the black and white motor leads from the power supply.
5. Position the plastic base for the Add-A-Zone onto the steel conduit box with the warning/caution label to the rear of the pump.
6. Verify that the electrical rating of the Add-A-Zone matches the values shown on the nameplate of the circulator.
7. Make the electrical connections according to the wiring diagram provided. (See Figure 1) Run the pump power wiring through one of the holes in the metal conduit box. Do not attach conduit to the hole in the plastic base. This hole is only for 24 volt control wiring. Use 14 AWG copper electrical wire with a minimum temperature rating of 90°C. Refer to your electrical code for wiring restrictions.



WARNING: Electrical Shock Hazard

Electrical connections are to be made by a qualified electrician in accordance with all applicable codes, ordinances and good practices. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

8. Run the thermostat wires through the grommet in the plastic base and connect to the appropriate TR/TW terminals. Run the 24-volt boiler control wires through the grommet in the plastic base and connect to the XX terminals (See figure 2). Do not use the holes in the metal conduit box for 24 volt control wiring. The holes in the metal conduit box are for power wiring only.
9. Position the Add-A-Zone relay PC board in the plastic base with the electronic components on the top. **Make sure that all pump wiring connections are inside the box below the PC board.** Note that the hole in the PC board must line up with the mounting hole in the plastic base.



WARNING: Electrical Shock Hazard

Improper assembly could cause electrical shock and fire. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

10. Secure the Add-A-Zone PC board and plastic base to the conduit box with one of the provided 8-32 screws.
11. Fasten the cover to the base using two of the provided 8-32 screws.

ADDITIONAL ZONE INSTALLATION (AZ-1X)

1. Disconnect the electrical supply to the pump before installing the Add-A-Zone controller.



WARNING: Electrical Shock Hazard

Disconnect and lock out the power before making electrical connections. Failure to follow these instructions could result in serious personal injury or death.

2. Remove the screw that holds the steel conduit box cover to the pump.
3. Remove the conduit box cover. The Add-A-Zone assembly replaces the conduit box cover.
4. If Add-A-Zone is being installed onto an already installed pump, disconnect the black and white motor leads from the power supply.
5. Position the plastic base for the Add-A-Zone onto the steel conduit box with the warning/caution label to the rear of the pump.
6. Verify that the electrical rating of the Add-A-Zone matches the values shown on the nameplate of the circulator.
7. Make the electrical connections according to the wiring diagram provided. (See Figure 1) Run the pump power wiring through one of the holes in the metal conduit box. Do not attach conduit to the hole in the plastic base. This hole is only for 24 volt control wiring. Use 14 AWG copper electrical wire with a minimum temperature rating of 90°C. Refer to your electrical code for wiring restrictions.



WARNING: Electrical Shock Hazard

Electrical connections are to be made by a qualified electrician in accordance with all applicable codes, ordinances and good practices. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

8. Run the wires for the following connections through the grommet in the plastic base. Connect thermostat wires to the appropriate TR/TW terminals. Connect the terminals designated as P/P in the AZ-1 and AZ-1X modules. Connect the X/X terminals in the AZ-1X to the AX/AX terminals in the AZ-1. As an alternative, the X/X terminals in the AZ-1X can be wired directly to the appropriate 24-volt boiler controls. (See figure 3 & 4) Do not use the holes in the metal conduit box for 24 volt control wiring. The holes in the metal conduit box are for power wiring only. **Do not add more than two AZ-1X expansion modules to one AZ-1.**



WARNING: Potential Circuit Overload

Adding more than two additional zones may cause circuit overload. Failure to follow these instructions could result in serious personal injury, death, and/or property damage.

9. Position the Add-A-Zone relay PC board in the plastic base with the electronic components on the top. **Make sure that all pump wiring connections are inside the box below the PC board.** Note that the hole in the PC board must line up with the mounting hole in the plastic base.



WARNING: Electrical Shock Hazard

Improper assembly could cause electrical shock and fire. Failure to follow these instructions could result in serious personal injury, death and/or property damage.

10. Secure the Add-A-Zone PC board and plastic base to the conduit box with one of the provided 8-32 screws.
11. Fasten the cover to the base using two of the provided 8-32 screws.

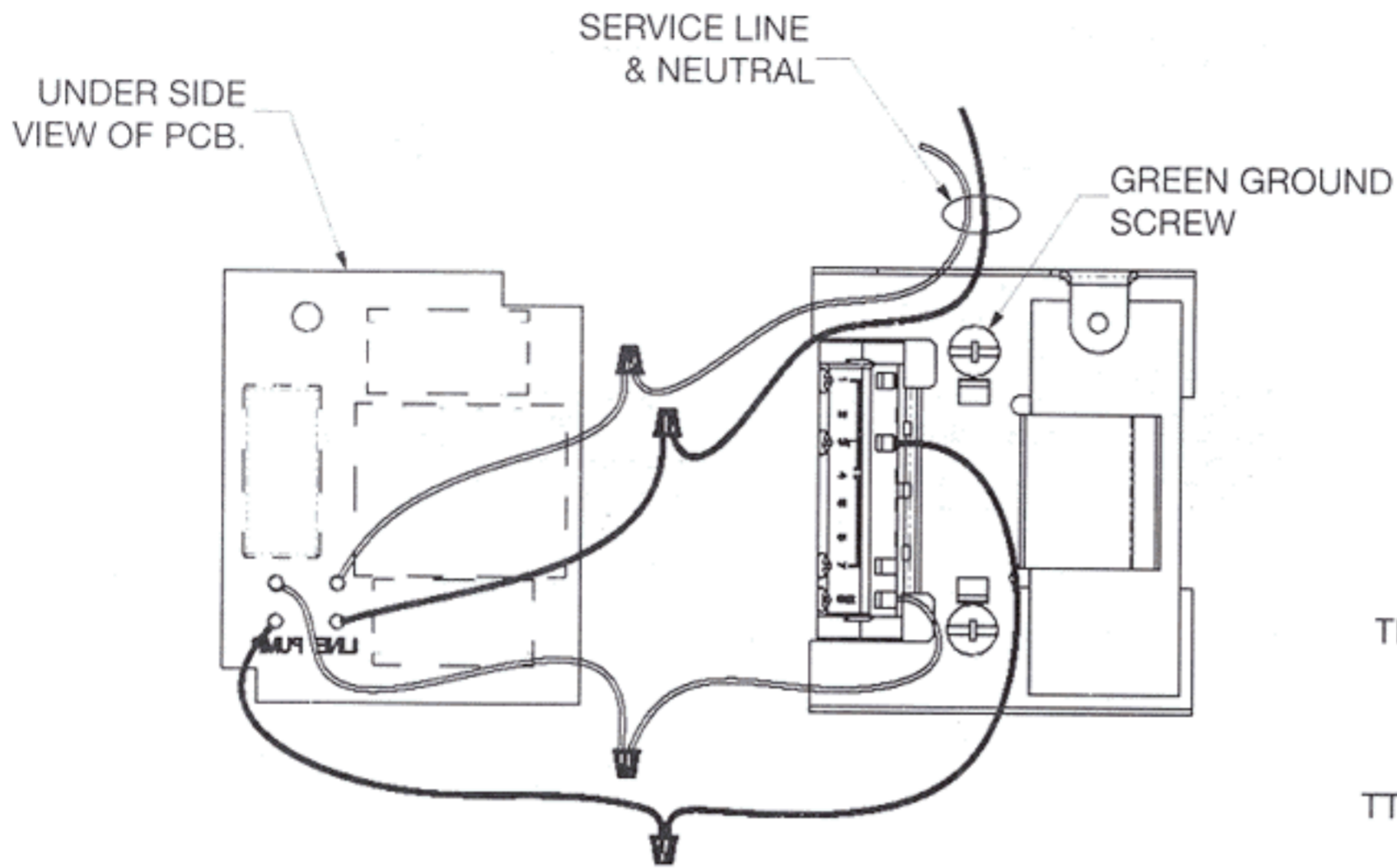


Figure 1: Wiring Add-A-Zone to Pump & Power Source

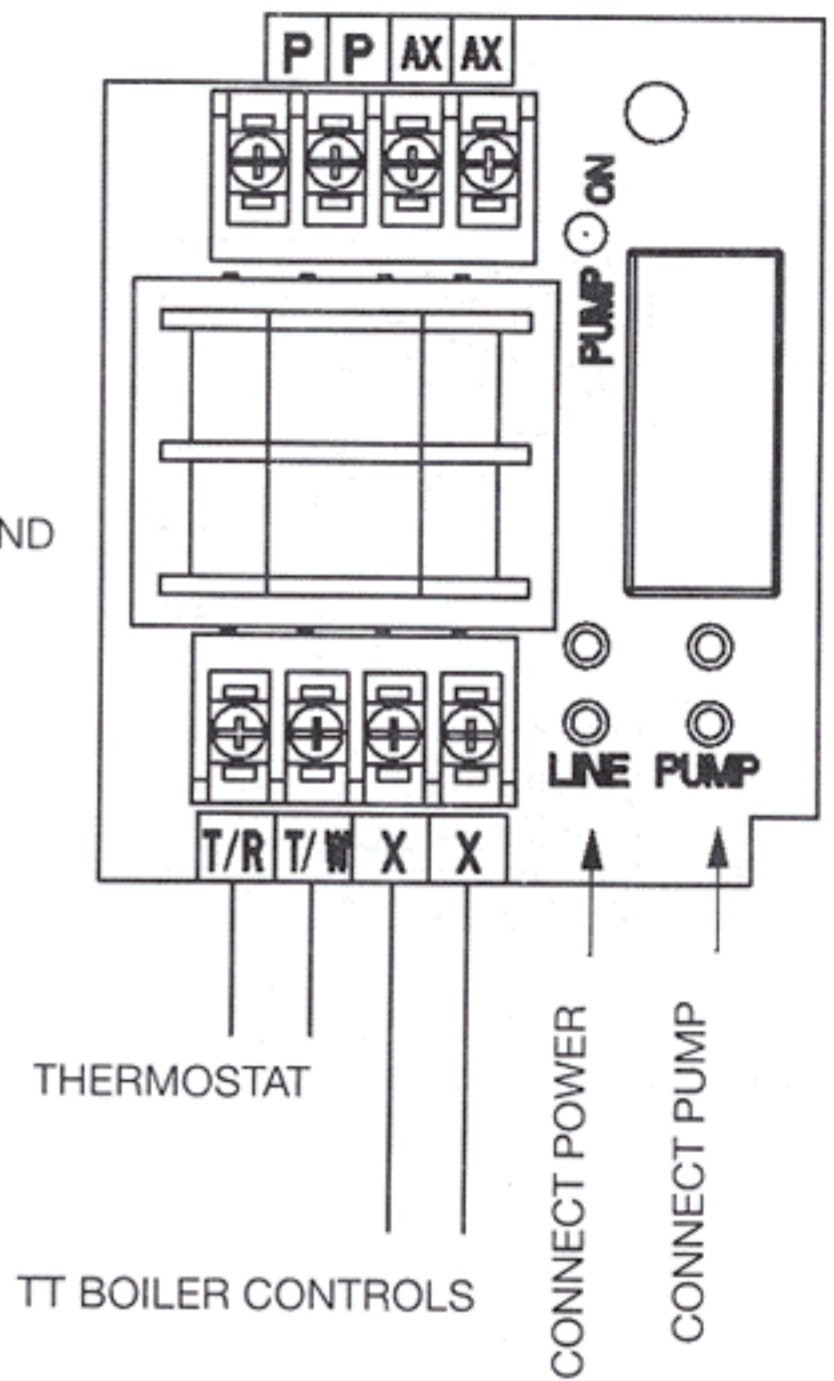


Figure 2: AZ-1 Wiring Diagram

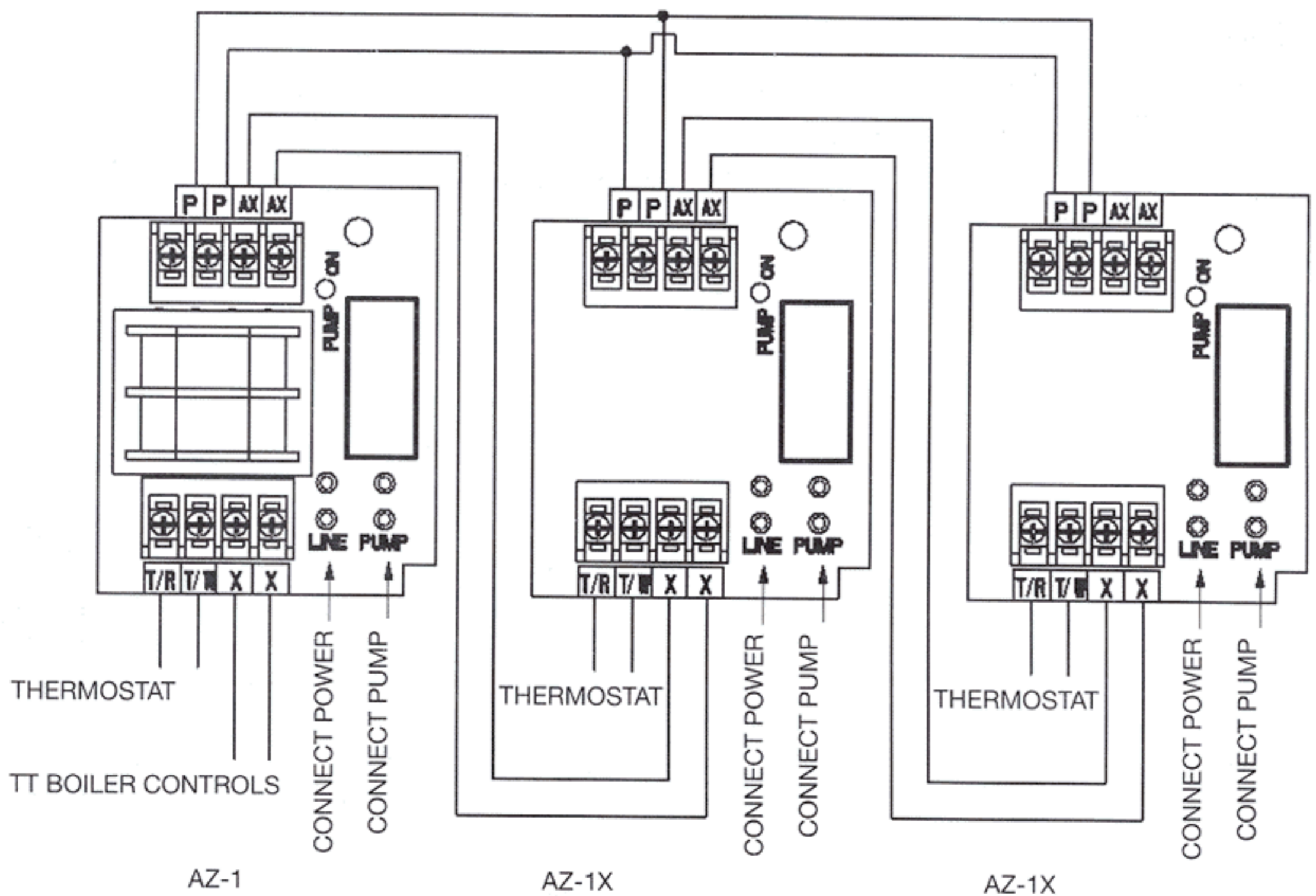


Figure 3: AZ-1 with AZ-1X Wiring Scheme

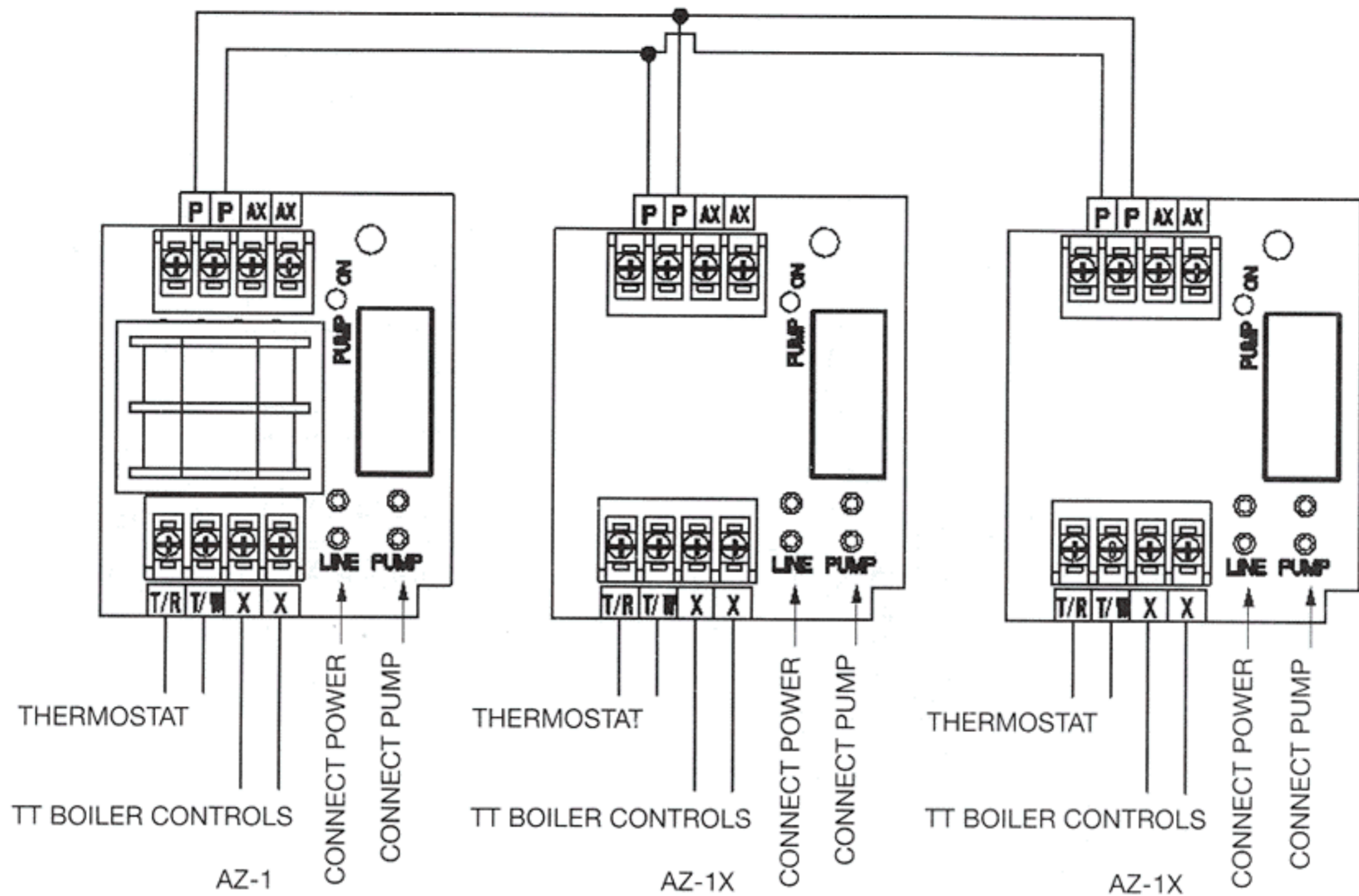


Figure 4: AZ-1 With AZ-1X Alternate Wiring Scheme

OPERATION

The circulators wired to the Add-A-Zone pump controllers are controlled by a low voltage thermostat or any other low voltage controller having a SPST switch. When the thermostat has a call for heat, the relay is pulled in; turning the circulator on and closing the X/X isolated end switch. The X/X isolated end switch can be wired to the boiler controls to turn the boiler on

when there is a call for heat. A green LED light indicates that the thermostat has a call for heat.

When the thermostat is satisfied, the circulator turns off and the X/X isolated end switch is opened. The boiler then turns off.



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