

**WARNING LABEL PART NO. V56871  
INSTALLED ON PRODUCT. IF  
MISSING, IT MUST BE REPLACED**

# ZoneTrol™ Pump Controller

## Models ZT-1X, ZT-1XH, ZT-2X



### Installation, Operation and Service Instructions

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



#### **SAFETY INSTRUCTION**

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

#### **DESCRIPTION**

The ZoneTrol Model ZT-1X and ZT-1XH are ready-to-install single-zone controller for circulator pumps in hydronic systems. The ZT-2X is a two-zone pump controller. The ZoneTrol controllers feature interchangeable plug-in/plug-out relay, 15 VA transformer, 10 amp rating and quick connect terminals. The units are operated by two-wire 24-volt thermostats and requires connection to 120 V, 60 Hz source voltage.

#### **BEFORE STARTING THE JOB**

Please read instructions completely before starting work

All work must be performed by qualified personnel in accordance with all applicable codes and ordinances.

#### **MECHANICAL INSTALLATION INSTRUCTIONS**

The ZoneTrol unit should be securely mounted on a wall, shelf, or partition near the pumps using four #8 screws (not included).

#### **ELECTRICAL INSTALLATION INSTRUCTIONS**

Electrical connections must be made using copper wire only.



**WARNING:** Electrical shock and potential circuit damage. Disconnect power supply before beginning installation. Failure to follow these instructions could result in serious personal injury or death and property damage.



**WARNING:** Improper wiring and wire can cause electrical shock and fires. Wiring connections must be made in accordance with all applicable electrical codes and ordinances. Use copper wire only. Failure to follow these instructions could result in serious personal injury or death and property damage.

Model No.	Maximum Numbers of Zones	Relay Type	Thermostat Current	Transformer Voltage	Maximum Ambient Temperature	Single Phase Motor Rating (Each Relay)	
						120 VAC	240 VAC
ZT-1X	1	DPDT	0.18 A	120V, 60 HZ	105°F (40°C)	10 A, 1/3 HP	10A, 1/2HP
ZT-1XH	1	DPST		15VA			
ZT-2X	2	DPST					

## ELECTRICAL INSTALLATION INSTRUCTIONS CONT.

**WARNING:** Potential electrical overload. Each circuit is limited for a maximum of 10 amps and 1/3 HP for 115V or 1/2 HP for 230V. Do not overload circuit. Failure to follow these instructions could result in serious personal injury or death and property damage.

### ZT-1X and ZT-1XH

The applications for the ZoneTrol pump controllers are too numerous to show all the various illustrations for the different models. The circuit diagrams shown in this manual indicate the proper terminals for wiring the ZT-1X and ZT-1XH controllers for most applications.

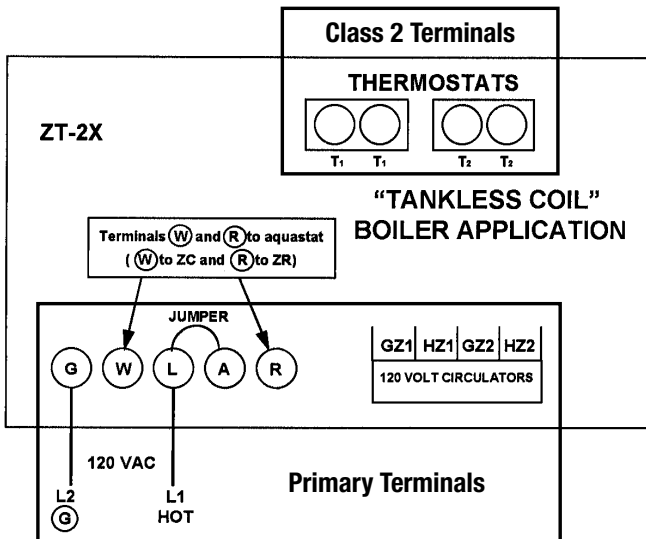
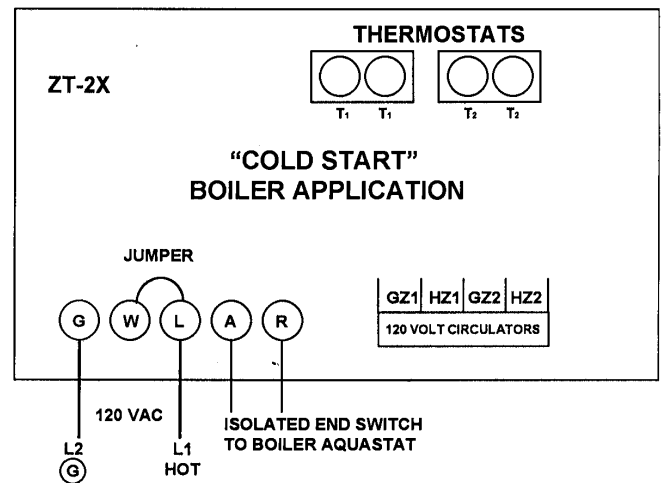
### ZT-2X "Cold Start" Boiler Applications

The "Cold start" boiler application provides circulator operation whenever a zone thermostat calls for heat (regardless of boiler water temperature).

- 1) A factory installed jumper is connected between (L) and (W) terminals. Leave the jumper in its current position.
- 2) Attach the low voltage SPST thermostat leads to the respective thermostat terminals.
- 3) Attach circulator leads to respective terminals.
- 4) Connect the 120 VA supply line to the terminals marked (G) ground and (L) hot.
- 5) In this arrangement, the (A) and (R) terminals become the isolated end switch. Connect the (A) and (R) terminals to the TT terminals on the boiler aquastat. **Note:** The required aquastat connections may vary, depending on model. Refer to aquastat manufacturers' instructions to ensure appropriate interconnections.

- 1) A factory installed jumper is connected between the (W) and the (L) terminals. Remove the jumper and place between terminals (L) and (A).
- 2) Attach the low voltage SPST thermostat leads to the respective thermostat terminals.
- 3) Attach circulator leads to respective terminals.
- 4) Connect the 120 VA supply line to the terminals marked (G) ground and (H) hot.
- 5) In this arrangement, line voltage is sent out (R) to the ZR terminal on the aquastat and returned to (W) from the ZC terminal on the aquastat. **Note:** The required aquastat connections may vary, depending on model. Refer to aquastat manufacturers' instructions to ensure appropriate interconnections.

**WARNING:** With jumper placed between terminals (A) and (L), a line voltage is present. Connection from these terminals to low voltage terminal could result in serious personal injury or death and property damage.



### "Tankless Coil" Boiler Applications

The "tankless coil" boiler application activates the boiler and permits circulator operation only after boiler water has reached the low temperature limit setting. If the boiler temperature drops below the low limit setting, all circulators will cease operation until the low limit temperature of the boiler is satisfied.

## SERVICE INSTRUCTIONS

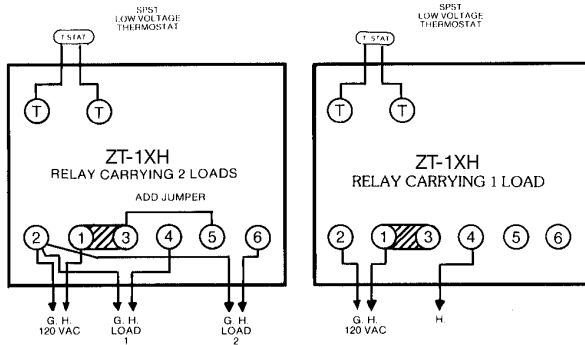
**WARNING:** Potential electrical shock. Disconnect all power to unit before removing chassis cover. Failure to follow these instructions could result in serious personal injury or death and property damage.

The ZoneTrol is quality constructed and should provide many years of trouble-free service when installed and operated in accordance with the instruction manual. To ensure optimum long-term performance, once each heating season, visually inspect the unit to check the condition of the contacts on the plug-in relays. Replace the relay(s) if contacts appear pitted or severely blackened.

**WARNING:** Improper wiring and wire can cause electrical shock and fires. The wiring diagrams shown on following pages provide interconnection recommendations only. The aquastat manufacturers' detailed wiring instructions must be followed to insure proper electrical connections to other system components including burner control, gas valve or limit control. All work must be performed by qualified personnel in accordance with applicable codes and ordinances. Electrical connections must be made using copper wire only. Failure to follow these instructions could result in serious personal injury or death and property damage.

### ZT-1XH (DPST)

APPLICATION: GENERAL



### ZT-1X Double Pole - Double Throw (DPDT)

The following describes the function of each terminal.

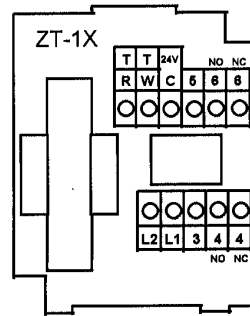
L1: Hot (fused) leg of 120VAC power input.  
L2: Common leg of 120VAC power input.

3: Input to one pole of relay contacts.  
4NO: Normally open output, 3 is made to 4NO when t-t circuit is made.

4NC: Normally closed output, 3 is broken to 4NC when t-t circuit is made.

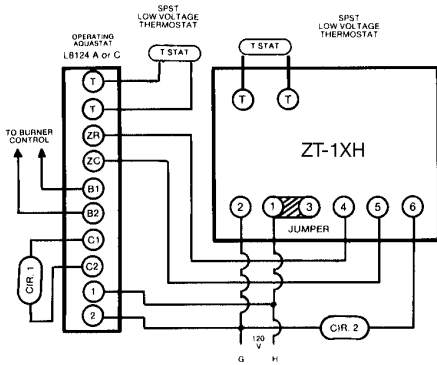
5: Input to one pole of relay contacts.  
6NO: Normally open output, 5 is made to 6NO when t-t circuit is made.

6NC: Normally closed output, 5 is broken to 6NC when t-t circuit is made.  
R/T and W/T are the t-t inputs. When a circuit is completed from R/T, the relay is activated.  
R/T and C are the 24 volt output used to power other devices. R/T being the hot leg, and C being the common leg.



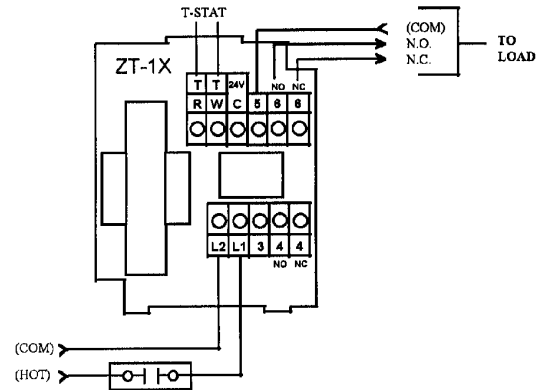
### ZT-1XH

APPLICATION: OIL – Add circulator to Aquastat Relay (MH L8124 A or C)



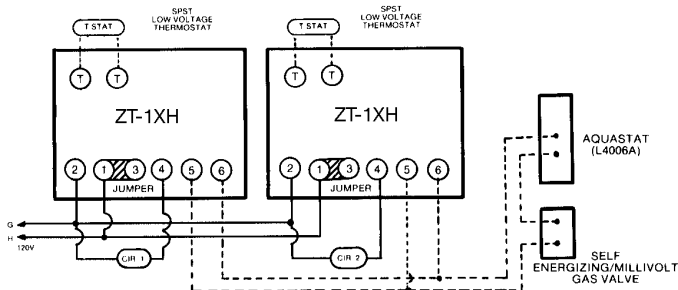
### ZT-1X

APPLICATION: GENERAL



### ZT-1XH

APPLICATION: GAS – Add circulator to boiler with self energizing/millivolt gas valve



### ZT-1X

APPLICATION: OIL – Add circulator to Aquastat (MH 8182 D or H)

