

# Zone Controller – Add-On Zones

## EB-ZTS-2

### Reference Master Zone Controller Board, EB-ZTS-1 or EB-Z2P

This add-on zone controller is for larger systems and represents a second board which acts as a “slave” to the main zone controller EB-ZTS-1 or EB-Z2P installed within the TS boiler. This combination provides connections for up to 8 active zones. All functions of the “master” EB-ZTS-1 or EB-Z2P remain the same, this is simply an add-on 4 zones which function similarly to zones 2, 3, and 4.

Features and configuration are the same as EB-ZTS-1 or EB-Z2P and it is assumed the installer is familiar with the TS boiler zone controller system.

**Note: Capacity dial switches must be set during installation.**

Drawings: **BH016**



**ELECTRO INDUSTRIES, INC.**  
2150 West River Street, PO Box 538, Monticello, MN 55362  
763.295.4138 • 800.922.4138 • fax 763.295.4434  
sales@electromn.com • www.electromn.com

## Installation/Hookup

1. Mount enclosure in a convenient location between the boiler/zone valves. Slab stats (temperature controlling thermostat) are wired at the bottom and zone valves are wired at the top.
2. **Transformer power** – internal transformer has primary taps for 120, 208, 240 volts, 60 hertz, single phase. Route appropriate source to left compartment and connect to transformer wires. Cap off the unused transformer wires.
  - a. 120 – black and white.
  - b. 208 – black and blue.
  - c. 240 – black and red.
3. Connect slab stat or temperature sensing **thermostat** to the bottom terminal block “R and W” as shown on drawing BH016. If using Electro-Stat, a common is required at each Electro-Stat. Common is available at the lower right terminal block. Drawing shows typical hookups for various thermostats. Connect per your selected thermostat.
4. Zone valve sizing/priority – actually there is no such thing as a priority associated with the 2 through 8 zones, but the system will function better if the smaller zones are connected to this “slave” controller. If you have a choice, the largest zone would be number 1 on the master board and then simply work your way down.

**Note:** When using this “slave” controller associated with one of the pump loops with pump zone controller EB-Z2P, see drawing BH017 page 4 with the pump controller showing the hookup wiring.
5. **Zone valves** are connected at the top terminal block. Terminals 1 and 2 represent the zone valve motor and terminals 3 and 4 represent the zone valve end switch contact. Again, the drawing shows three zone valve types, hookup per your selected type. Notice drawing Note 3, if you’re using priority you must use a zone valve component with separate end switch contact.
6. The zone controller board turns on the boiler with the W OUT tab. On the right side of the zone board route a wire from the W OUT to the boiler W stat terminal. Route a second wire from the controller C tab to the boiler C terminal block so that both units are at the same common reference.

## Thermostat Heat Anticipator Setting

The two thermostat screw terminal contacts pass through to the zone valve motor terminals. Therefore, the thermostat loading is the zone valve motor. Set the anticipator to match the zone valve motor current. If Honeywell V8043-\*\*\*\* zone valve, set to 0.4.

## Zone Valve Power

This unit has a 40VA transformer which should be adequate for four zone valves (assuming 9VA each). There is control cable logic isolation between the two boards, but do not cross or mix 24 volts between this slave board and the boiler transformer/master zone board.

## Circulator Pump Information

The main pump must be wired and operated associated with the boiler itself. This zone controller has no direct provision for connecting circulator pumps.

If you have a zoning arrangement where there is more than pump and various sets of zone valves tied to each pump, you can wire the pump for this zone controller branch from the pump relay on this controller board. Drawing BH015 shows pump connected to the pump relay on this board.

## Options

ZONE PUMPS – add switching relay EE-5051 to each zone valve terminal block, request drawing BH012.

## Setup – Zone Sizes and Boiler Stage Sizes

On the zone valve controller board there are four dial switches. From building design information and/or zone capacity calculations, installer must know the approximate BTUH capacity of each zone. Dial in this capacity for each zone:

- 0 = 15,000 BTUH
- 1 = 30,000 BTUH
- 2 = 45,000 BTUH
- 3 = 60,000 BTUH

### Monitor LED's

- Power on – green LED represents good fuse and 24-volt transformer source.
- Slab stat or temperature sensing thermostat inputs – illuminates with voltage at “W”.
- Zone valve – illuminates with appropriate stat heat call **and** an end switch contact between 3 and 4.

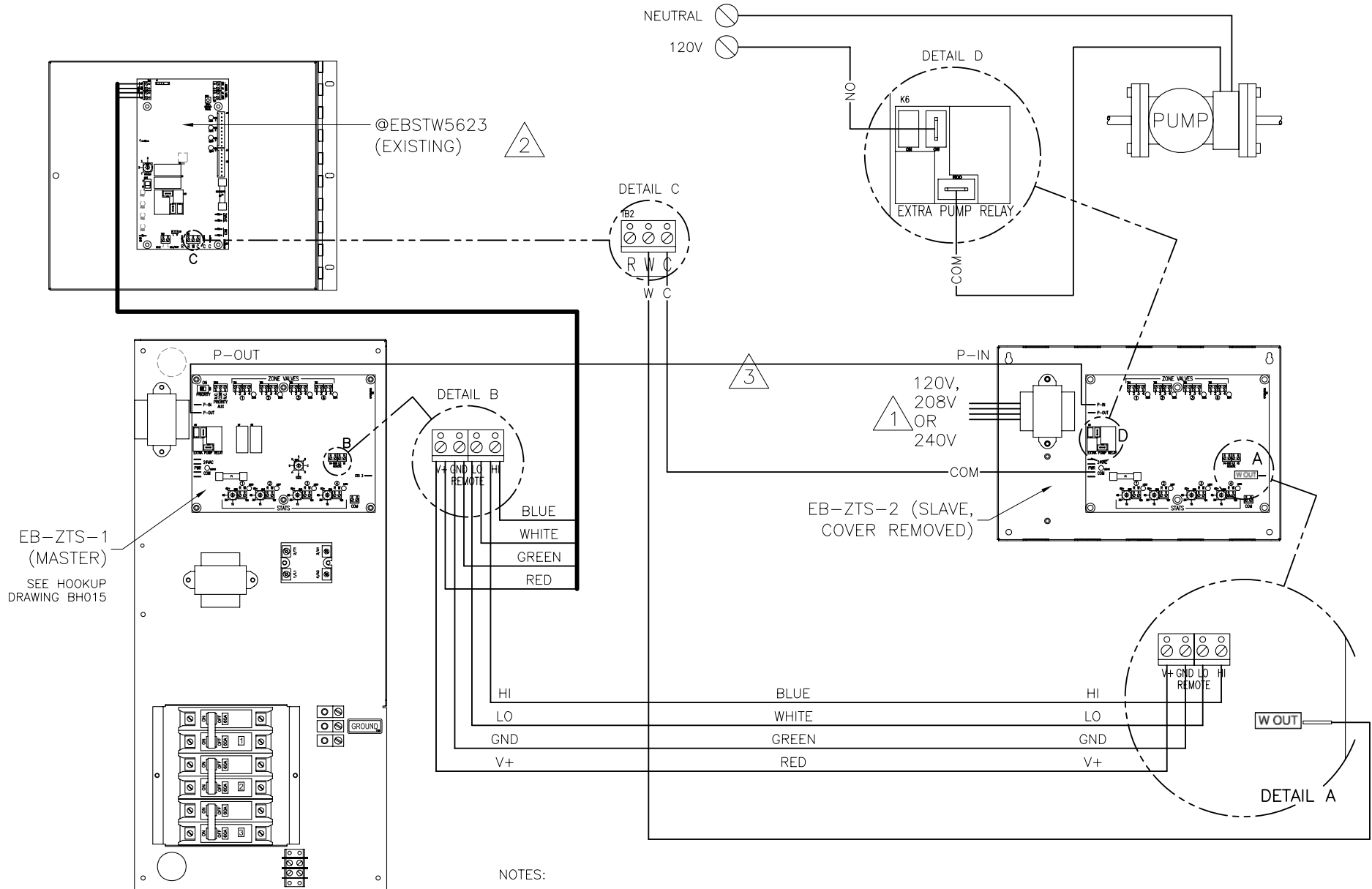
### Fuse

Protects this board and all external field connections/wiring. Replace with 2-amp, fast blow, AGC2.

### Staging

This “slave” board sends capacity information to the master board. The master board uses the zone sizing (Btu capacity) information to determine which stages should be active within the main boiler. In other words, this is simply an extension of the four zones on the master board and the staging calculations are summed from all zones (1-8) that may be active at any one time.

# EB-ZTS-2 INSTALLATION AND HOOKUP



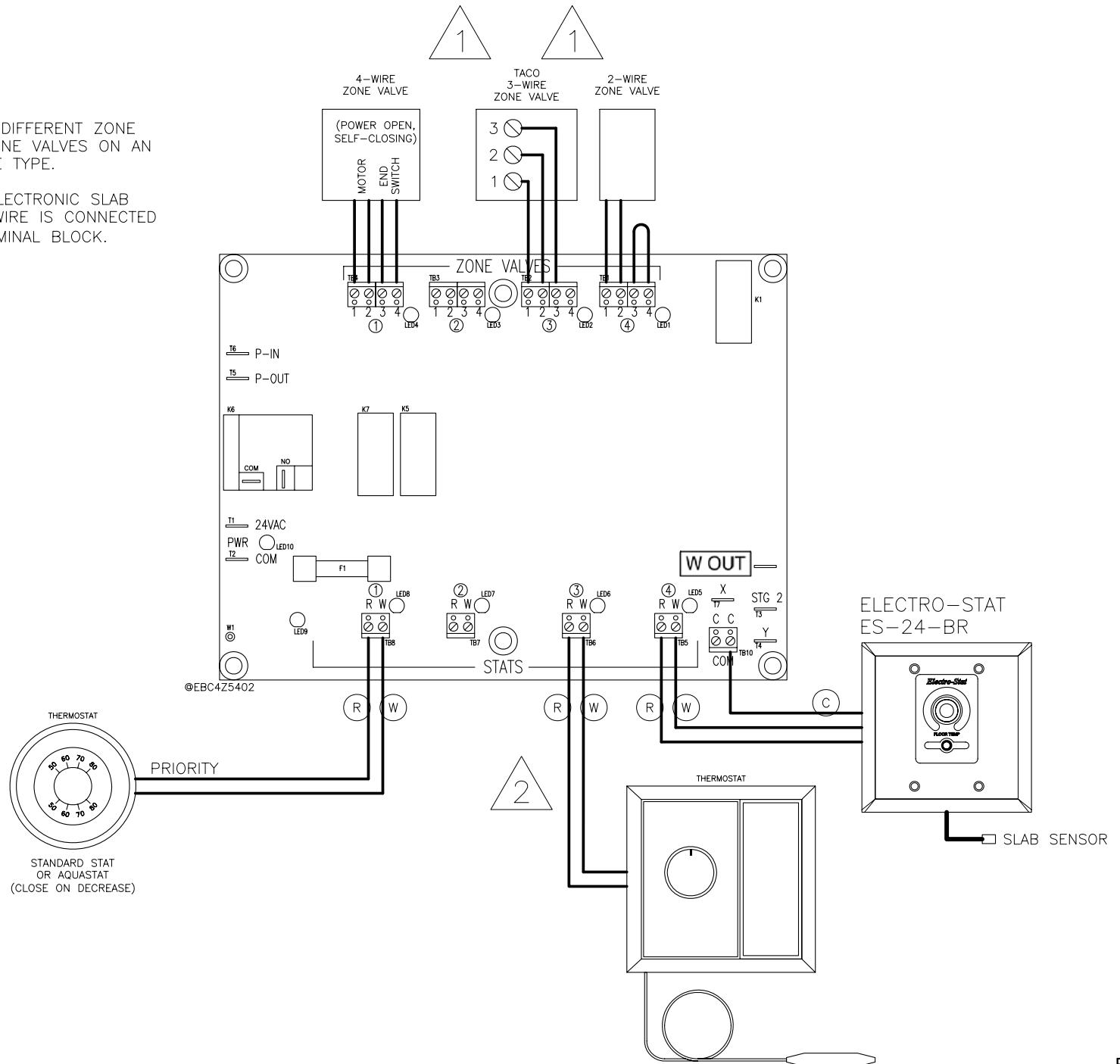
## NOTES:

1. SEE WIRING SECTION OF INSTALL MANUAL FOR TRANSFORMER TAPS.
2. THIS APPLICATION IS INTENDED FOR EB-WA-\*\* AND EB-WO-\*\* MODELS ONLY. IF EB-S-\*\*, REPLACE EXISTING BOARD WITH @EBSTW5623.
3. MUST HAVE P-OUT TIED TO P-IN.

# FOUR-ZONE HOOKUP

NOTES:

1. SHOWN IS HOOK-UP FOR 3 DIFFERENT ZONE VALVE TYPES. TYPICALLY ALL ZONE VALVES ON AN INSTALLATION WILL BE THE SAME TYPE.
2. BASIC STAT SHOWN, SOME ELECTRONIC SLAB STATS MAY BE 3-WIRE. THIRD WIRE IS CONNECTED TO THE "SYSTEM COMMON" TERMINAL BLOCK.



## LIMITED WARRANTY STATEMENT

Electro Industries, Inc., expressly warrants its products to the original purchaser of this product, except as noted and listed below, to be free of defects in material and/or workmanship for a period of three (3) years from manufacturing date code or two (2) years from date of installation, whichever occurs first. Except for this express warranty, the purchaser accepts product(s) AS IS. Remedies under this warranty are limited to repairing or replacing, at Electro Industries option, any malfunctioning part or component which shall, within the above stated warranty, be returned to Electro Industries at the address listed below, freight prepaid.

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This warranty does not apply:

- If this unit has been installed in violation of any codes or statutes.
- If unit has been repaired improperly.
- If unit has been subject to alteration, neglect, or misuse.
- If installed in an area where atmosphere contained chemical erosion.
- If components are damaged due to freezing or water chemistry erosion.
- Damages resulting in shipment or handling by the freight carrier. It is the receiver's responsibility to claim and process freight damage.
- Damage resulting from improper voltages or power supply source.
- If unit is not installed according to manufacturer's specifications and installation instruction manual.
- If incorrect model or size was installed for the application.
- If unit contains modifications to internal wiring, removal or bypass of parts, bypass of safety circuits, modification of parts or circuit boards, or mechanical airflow changes not authorized in writing by the factory.
- If the serial identification decal (label) is defaced.
- If the invoice is marked "AS IS".

The returned part or component must contain a warranty tag or information clearly stating serial number, installation date, and nature of failure.

Replacement of a part or component under this limited warranty does not extend the warranty term or period.

There are no other express warranties. Specification sheets and descriptions of this product are only to identify it, and are not a warranty claim that the unit fits the description. We do not warranty this product suitable for the specific installation or application. It is the owner's (or installer's) responsibility for proper application.

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