

TACO TECHNICAL BULLETIN

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PRODUCTS: 555, 560, 570 & GT ZONE VALVES
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The purpose of this Technical Bulletin is to review the electrical operation of the Zone Valve Power Unit. The discussion contained in this Technical Bulletin is applicable to all Taco 555, 560 and 570 Series and Geothermal Zone Valves.

Figure #1 illustrates that there are two separate and different electrical circuits involved with the Taco Zone Valve Power Unit. Part of each circuit is inside the unit and part of each circuit is outside the unit.

One circuit, the valve operating circuit, is connected to terminals #1 and #2 of the power unit. Inside the unit, the heat motor heating element and a normally closed switch are connected in series. The circuit is completed on the outside of the unit and consists of the control device (normally a thermostat) and a power source (usually a 40VA Transformer) connected in series. Connecting the inside portion of the circuit and the outside portion of the circuit through terminals #1 and #2 completes the circuit.

The other circuit, an auxiliary control switching circuit, connected between terminals #2 and #3 has only a normally open switch inside the power unit. This switch, generally called the "end switch", closes as the valve opens to control an outside device. Usually, the outside device being controlled by the end switch is the boiler control which has its own transformer for supplying power to the boiler control relay. Connecting the inside portion of the circuit and outside portion of the circuit through terminals #2 and #3 completes the circuit.

While the two circuits touch at terminal #2, they do not communicate or interfere with each other in any way. Each circuit has its own power supply, and the current in each circuit flows only in that circuit. This occurs because the transformer in either circuit cannot cause a voltage or current driving force to be realized in the other circuit when joined only at one point to that circuit.