

SUPERSEDES: New

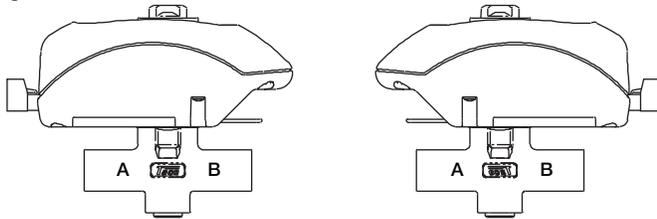
EFFECTIVE: March 31, 2013

Plant ID# 001-4169

Application:

The Taco Potable Water Zone Sentry valve is available in a 2-way sweat configuration with either a normally open or normally closed actuator. Some typical installations would include a combination domestic water-hydronic heating system, culinary installation or water shut off to a potable system.

Figure A

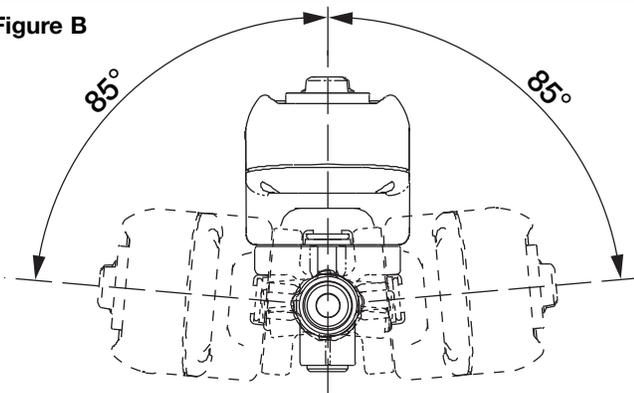


CAUTION: Sand or other contaminants can damage the valve's internal components and cause it to fail prematurely. Precautions must be taken to prevent contaminants from damaging the valve.

Valve Installation:

1. On hot water applications, the valve body may be installed in any orientation. On chilled water installations, do not install with the actuator beyond 85° from the topmost position (see Figure B). When the Zone Sentry is installed in a vertical run of pipe, the valve may be installed in any orientation for either hot or chilled water.

Figure B



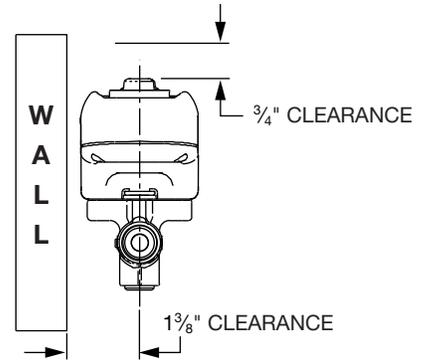
2. Before mounting the body, refer to Figure C for any clearance requirements.



CAUTION: Actuator must be removed from the valve body before soldering (see Figure D). Ball valve must be in the full open position before soldering. Valve shipped in the closed position.

3. Use of a solder with a melting point below 600°F is recommended. Do not overheat! Make sure the ball valve is in the FULL OPEN position during soldering. Direct flame tip away from the center of the valve. Cool valve quickly with a wet cloth.

Figure C



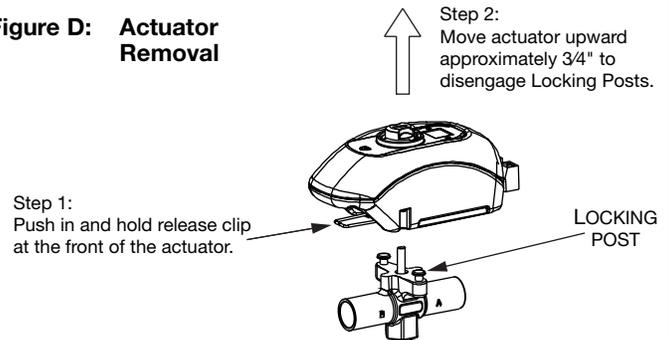
4. Solder build-up on the ball valve may prevent proper opening and closing of the valve. Actuate the actuator once or twice and make sure the valve rotates fully.
5. Valve body can be submerged for leak testing before the actuator is attached.

Actuator Installation / Wiring:

NOTE: Some power robbing thermostats require the use of a resistor (always use the resistor provided by the thermostat manufacturer with the Zone Sentry). Consult the thermostat instructions for the resistor installation.

1. Actuator Removal: Remove the valve actuator prior to soldering by pushing in and holding the release clip at the front of the actuator and lifting upward approximately 3/4" (see Figure D).
2. To re-assemble the actuator to the valve body: Position actuator such that the "D" shaped valve stem aligns properly with the "D" shaped actuator drive cavity. (Note: The "D" shaped stem design allows for correct insertion every time.) Next, slide the valve stem into the actuator cavity, push in and hold the release clip until the actuator slips over the valve locking posts (see Figure D). Once the actuator is flush to the valve body, let go of the release clip. Using very little force, try to take the actuator off of the valve body without using the release clip. Both locking posts should be firmly attached to the actuator. If the actuator slides up the stem, repeat the assembly process.

Figure D: Actuator Removal



3. Changing the actuator orientation: The actuator may be attached to the valve body in either direction (see Figure A). In order to reverse the actuator orientation on the valve body, see the actuator removal instructions in Step 1 with the following exceptions. Instead of moving the actuator the full 3/4", move it

just high enough to clear the locking posts, rotate the actuator 180° and reinstall it on the locking post by following the previous instructions for reassembling the actuator.

- The plug-in quick connects can be disconnected from the valve actuator for ease of wiring. Insert the corresponding wire into the quick connects and tighten by turning the screw.

CAUTION: Do not jumper power/motor (24 VAC) connection terminals, even temporarily. This may cause damage to the thermostat's heat anticipator.

Mode of Operation:

- Upon initial field installation the capacitor requires a full charge, up to 35 seconds, before the valve starts to turn. Charging time will vary (typically less) during normal operation.
- When the capacitor is charging the green LED light will FLASH.

- Once the capacitor is charged, the green LED will stop flashing but remain ON. At this point the valve's actuator will rotate the ball valve. The green LED will remain ON as long as the thermostat is calling (the unit is powered).
- Once the thermostat is satisfied the green LED will turn OFF and the valve will rotate 90° into its normal position or non-powered position. For example: If the actuator is an NC (normally closed) version, the actuator would open the valve when the thermostat calls. Once the thermostat is satisfied the actuator would then rotate the valve 90° to its normally closed position.

WARNING: Do not use zone valves on indirect water heaters without a tempering device.

Multi-status LED and Troubleshooting:

This troubleshooting table is intended as a helpful guide and is not all inclusive. There could be other causes and solutions for a non-functioning product.

LED STATUS	INDICATES	POSSIBLE CAUSE	POSSIBLE SOLUTION
Not Illuminated	Power off	No call No Power	Verify there is a call. Check for voltage at the actuator.
Steady blink (once per second)	Charging		
Solid	Power on		
Slow blink (once every 5 seconds)	Excessive charging time	Not enough VA	Reset the actuator (see note). Use a larger VA transformer or add an additional transformer.
		Too many valves per transformer	Reduce the number of valves. Use a different thermostat.
Double blink (twice every 5 seconds)	Excessive opening time	Obstruction in valve Buildup of contamination in valve	Reset the actuator (see note). Remove obstruction. Clean the valve and/or system. Replace valve.
		Failed actuator	Replace Actuator.

NOTE: Reset the actuator by removing power for 5 seconds and then restoring power.

Flow Coefficients and Maximum Close-Off Pressure:

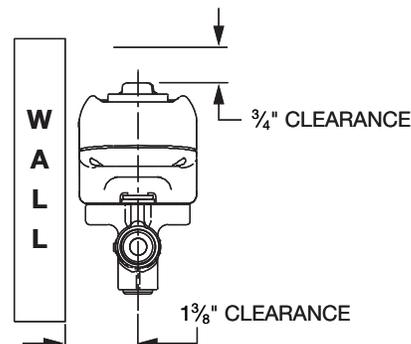
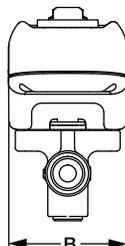
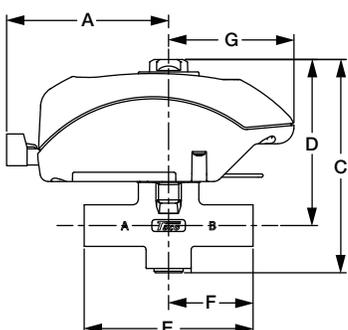
VALVE SIZE	2-Way C _v (Kv)/Ft. of PIPE EQUIV.*	CLOSE-OFF PSI (kPa)
1/2"	4.9 (4.3) / 9.5	0-125 psi (0-862 kPa)
3/4"	10.3 (8.9) / 8.4	

* At 4' per second (maximum recommended flow rate is 8' per second).

Dimensions (for reference purposes):

English dimensions are in inches. Metric dimensions are in millimeters. Metric data is presented in ().

VALVE SIZE	A	B	C	D	E (Sweat)	F	G
1/2"	3 (76.2)	2 3/8 (60.3)	4 1/8 (104.8)	3 1/16 (77.8)	3 1/8 (79.4)	1 9/16 (39.7)	2 5/16 (58.7)
3/4"				3 3/8 (79.4)			



Zone Valve Wiring Diagrams



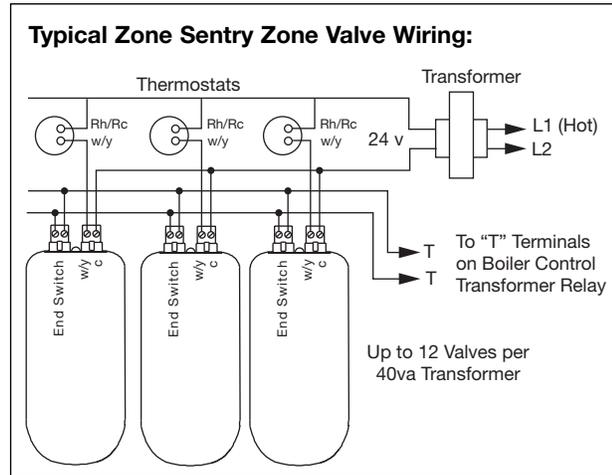
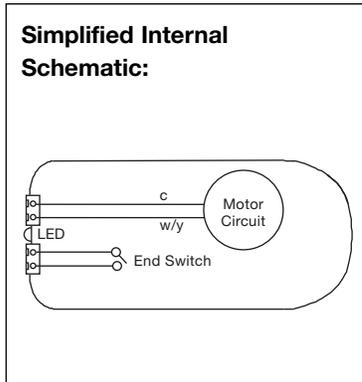
WARNING: Wiring connections must be made in accordance with all applicable electrical codes.



WARNING : To prevent electrical shock, disconnect electric power to system at main fuse or circuit breaker box until installation is complete. When a service switch is installed, more than one disconnect switch may be required to deenergize this device for servicing.



NOTE: Some power robbing thermostats require the use of a resistor (always use the resistor provided by the thermostat manufacturer with the Zone Sentry). Consult the thermostat instructions for the resistor installation.



Product Specifications:

Maximum Static Pressure:	300 PSI (2,100 kPa)
Maximum Shutoff Pressure:	125 PSI (875 kPa)
Maximum Ambient Temperature:	135°F
Fluid Temperature Range:	20° to 220°F, (-7° to 105°C)
For Indoor Use Only:	
Service:	Potable Water
Ball Rotation Speed:	Full Open to Full Close (90° turn), 5 seconds (after charge time) Full Close to Full Open (90° turn), 5 seconds (after charge time)
Seat Leakage:	Drop-Tight Close-Off
Electrical Rating:	24 VAC, 60 HZ, 0.48 Amps Do not use more than 12 zone valves per 40VA transformer.
Power Consumption, Charging:	11.4 Watts, 0.48 Amps
Power Consumption, Power On:	1.44 Watts, 0.06 Amps
Heat Anticipator Setting:	0.5 Amps
End Switch Rating:	1 Amp @ 24 VAC

NOTE: Some power robbing thermostats may cause a reduction of the number of valves possible per 40VA transformer.

Materials of Construction, Actuator:

Body:	High Performance Engineered Polymer
Gears:	High Performance Internally Lubricated Engineered Polymer

Materials of Construction, Valve (≤ 0.25% lead):

Body:	Forged Bronze
Stem:	Brass
Press Ring:	Brass
Ball:	Brass (Chrome Plated)
Seat:	Modified Teflon®
O-rings:	Viton



LIMITED WARRANTY STATEMENT

Taco, Inc. will repair or replace without charge (at the company's option) any product or part which is proven defective under normal use within one (1) year from the date code.

In order to obtain service under this warranty, it is the responsibility of the purchaser to promptly notify the local Taco stocking distributor or Taco in writing and promptly deliver the subject product or part, delivery prepaid, to the stocking distributor. For assistance on warranty returns, the purchaser may either contact the local Taco stocking distributor or Taco. If the subject product or part contains no defect as covered in this warranty, the purchaser will be billed for parts and labor charges in effect at time of factory examination and repair.

Any Taco product or part not installed or operated in conformity with Taco instructions or which has been subject to misuse, misapplication, the addition of petroleum-based fluids or certain

chemical additives to the systems, or other abuse, will not be covered by this warranty.

If in doubt as to whether a particular substance is suitable for use with a Taco product or part, or for any application restrictions, consult the applicable Taco instruction sheets or contact Taco at [401-942-8000].

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