Modulating Zone Valves

Installation and Operation Instructions

INSTALLATION

Inspection

Inspect the package for damage. If package is damaged, notify the appropriate carrier immediately. If undamaged, open the package and inspect the device for obvious damage. Return damaged products.

Precautions

⚠ WARNING ⚠

- Electrical shock hazard! Do not connect power before installation to prevent electrical shock or equipment damage.
- Make all connections in accordance with the electrical wiring diagram and in accordance with national and local electrical codes. Use copper conductors only.
- All conductors shall be provided with insulation rated for the highest voltage for motor.

⚠ CAUTION ⚠

- Avoid locations where excessive moisture, corrosive fumes, explosive vapors or vibration are present.
- Avoid electrical noise interference. Do not install near large conductors, electrical machinery or welding equipment.
- When making lead connections within the actuator, use caution not to put leads or connectors underneath the motor.

Motor-driven valves, like all other mechanical equipment, should be installed with a degree of accessibility to enable quick and economical servicing or replacement. In high-rise buildings, use reducing valves on branch lines on lower floors.

Mounting

The valves can be mounted in horizontal or vertical piping. When installed in horizontal piping, the actuator must be above the valve body and can be tilted left or right but must not be tilted below 85º from vertical.

For 3-Wire Floating Valves Only

The three-wire floating actuator can be removed from the valve body by pressing and holding the release button on the actuator plastic base and lifting the actuator away from the body.

Note:

The valve body and actuator are of one-piece design and are for factory mounting only

Piping

The zone valves must be piped so that the seating ball always closes against the direction of flow, except in diverting configurations. The manual operating lever, when moved to the mid-position, can be used to allow flushing of the hydronic system after installation. The valves are designed for use in closed hydronic heating and cooling systems. Use in systems which have substantial make-up water (open systems) is not recommended. High levels of dissolved oxygen and chlorine found in open systems may attack the valve materials and result in premature failure.

Notes:

- Make certain there is no overhead water source that may drip onto valve actuator.
- In normal service, as some condensation may occur on or around the valve, the valve must be installed over a drip pan.

Manual Operating Lever

All valves are equipped with a manual operating lever. This lever allows the valve to be opened when power supply is not available or for system flushing before it is put into operation by maintaining the valve in the mid-position. This lever is also used as a valve position indicator.

Press and hold the manual button on the plastic enclosure top and move the manual operating lever slowly to the right to open Port B and to the left to close Port B. When valves are placed in the mid-position with the manual operating lever, the seating ball is removed from all seats or ports.

For 0-10 VDC or 4-20 mA Input Valves Only

Selection of Direct Action (DA) or Reverse Action (RA)

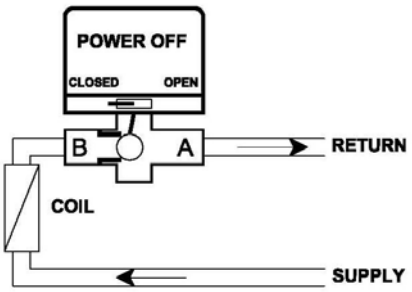
The factory setting is for direct action. Can be changed in the field to reverse action by moving the jumper from DA position to RA position on the PC board. DA position is set for Port B closed at 0 VDC input. RA position is set for Port B closed at 10 VDC input.

Selection of 0-10 VDC or 4-20 mA Analog Input

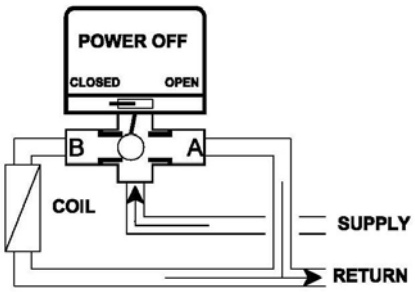
The factory setting is 0-10 VDC. Can be changed in the field to 4– 20 mA by moving the jumper from “V” position to “A” position on the PC board.

Piping and Installation

2-Way Valve



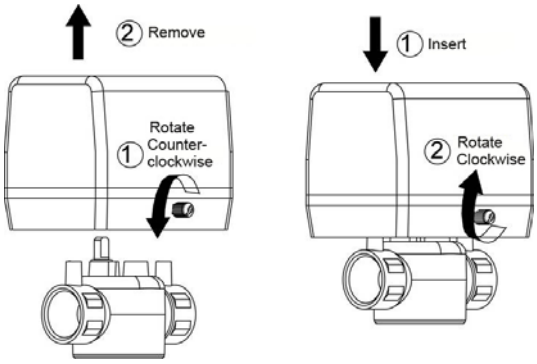
3-Way Valve in Diverting Configuration



Threaded Connections
Apply Teflon tape to all but the last two threads of male pipe thread. Hand screw the pipe into the valve, turning it as far as it will go. Use a wrench to fully tighten the valve to the pipe. Do not over tighten or strip threads.

Checkout
1. After the piping is under pressure, check the valve body and the connections for leaks.
2. After the valve body and actuator are installed, energize the actuator and check

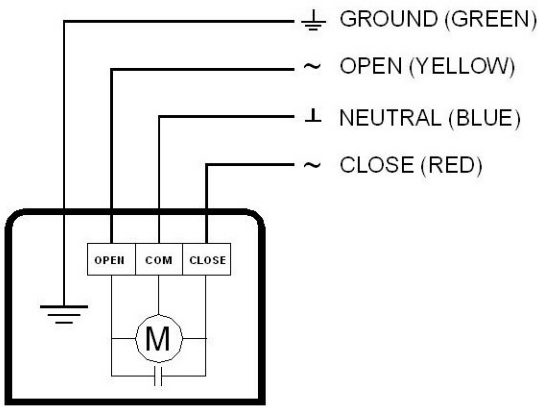
Maintenance Note



Actuator Removal and Installation
Actuator and valve body are factory-mounted. Remove and install actuator in the field if and when field replacement is necessary. Follow the steps as illustrated.

Actuator Wiring Diagrams

3-Wire Floating Input



0-10 VDC or 4-20 mA Proportional Input