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68236.01

Zone valve

676 Series

Installation, commissioning and servicing instructions

Function

Zone valves are used to control the thermal carrier fluid in heating and air-conditioning systems.

Product range

676 series two-way zone valve, 1/2" - 3/4" - 1", sweat connections. The zone valves are made to be connected with the Electro-thermal Control Actuator 656 series.

Technical Characteristics

Body	· Connections:	1/2" - 3/4" - 1" sweat
	· Material: body:	brass
	trim:	brass
	stem:	stainless steel
	spring:	stainless steel
	seals:	EPDM
	· Maximum working pressure:	150 psi (10 bar)
	· Maximum temperature:	200°F (95°C)
	· Cv rating:	Cv=4.0 (Kv = 3.5)
	· Maximum close-off:	18 psi (1.2 bar)
	· Medium:	water, glycol solutions
	· Max percentage of glycol:	50%
Actuator	Type:	Normally closed
	Supply voltage:	24 VAC
	Starting current:	≤ 1 A
	Working current:	140 mA
	Power consumption:	3 W
	Level of protection:	NEMA 1/IP44 in vertical position
	Rating of micro switch:	0.8 A
	Maximum Room Temperature:	120°F (50°C)
	Lead length:	30"
	Opening and closing time:	120 to 180 sec

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.**

CAUTION: All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of systems in accordance with all applicable codes and ordinances.

CAUTION: If the zone valve is not installed, commissioned and maintained properly, according to the instructions contained in this manual, it may not operate correctly and may endanger the user.

CAUTION: Make sure that all the connecting pipework is water tight.

CAUTION: When making the water connections, make sure that the valve connecting pipework is not mechanically over-stressed. Over time this could cause breakages, with consequent water losses which, in turn, could cause harm to property and/or people.

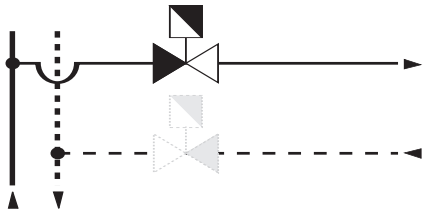
CAUTION: Water temperatures higher than 100°F can be dangerous. During the installation, commissioning and maintenance of the zone valve, take the necessary precautions to ensure that such temperatures do not endanger people.

Leave this manual for the user.

Installation

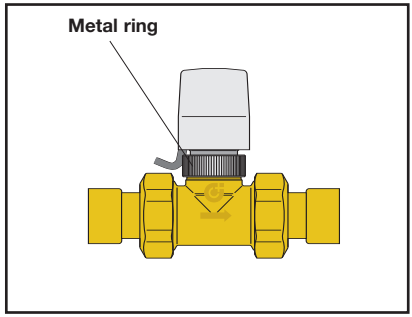
When mounting the valve onto the system the arrows indicating the flow direction must be respected. The two-way valve can be installed either on the supply pipe or on the return pipe. The valve should always be installed with the actuator in the up-right or horizontal position, it should never be in the upside-down position.
When the valves are installed into boxes, there must be at least 3/4" of space left between the control actuator and the frame. This is for maintenance or replacement reasons.

The 2-way valve, 676 series, can be installed in the flow or return pipework.



Manual opening

With the electro-thermal actuator mounted, the valve is normally closed. For manual opening, remove the electro-thermal actuator unscrewing the lower metal ring.



Sweat connections

Remove the union nut, tailpiece, and washer before soldering. Excess heat may damage seals installed at the factory. Sweat connections are intended for low temperature, "soft" solders. They are not designed for "silver" solders or other high temperature methods. Use standard soldering procedure, taking care not to overheat the valve body. Properly clean the copper tube and valve or union end fitting.

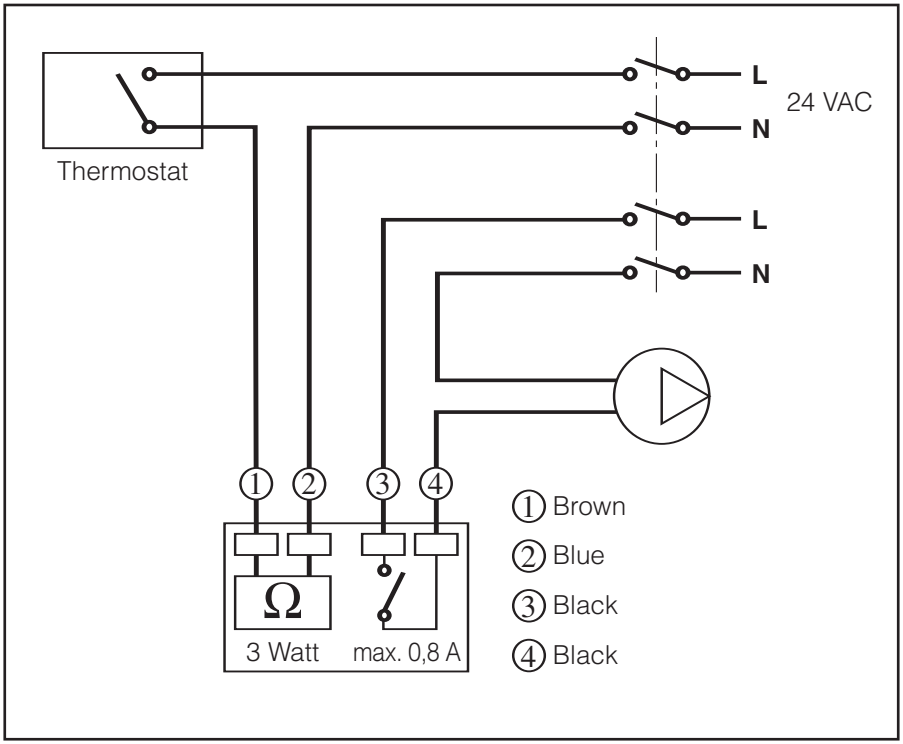
Union washer installation or replacement

After valves, unions and/or tailpieces are installed, or in the event a washer needs replacement, inspect the washer for damage or debris. Carefully place the new washer, confirm that the washer is properly placed and reassemble the union connection. Tighten the union nut hand tight, and tighten an additional 1/4" turn.

Wiring diagram for Electro-thermal Control Actuator with micro switch

Diagram with pump disconnected

The auxiliary microswitch can be used to switch off the pump when heat is not required and the valve is closed.
If the pump's power consumption exceeds the capacity of the contacts, equal to 0,8 A, an intermediate relay should be used.



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