

# Z-one™ zone valves



01115/16 NA

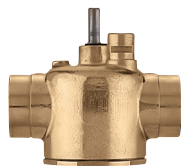
Replaces 01115/15 NA

## Z series










### Function

Z-one™ valves are used to automatically shut-off the flow or redirect hot and chilled water in hydronic systems, open systems, closed systems, low-pressure steam; and are UL listed for plenum installations. The motorized two-position, on/off, spring return Z1 series actuator has an end mounted push button for quick installation to the valve body. The actuator is equipped with or without an auxiliary micro-switch and models are either normally closed or normally open and with wire or terminal connections. The high temperature zone valve body Z2 series is 2-way straight through and the valve body Z3 series is 3-way diverting or mixing. The Z1 series actuator is easily attached by a push button lock and requires no tools. The Z-one valve provides 100% bubble-tight seat close-off leakage. The high temperature and high close-off performance characteristics of these zone valves, combined with the compact size, makes them suitable to fit inside baseboards or directly in fan coil units. Z-one valves are available with 1/2 to 1 inch press fittings, the Presscon™ copper tail-piece with union nut, making installation and maintenance fast, easy and efficient. Special slots in the EPDM O-ring allows fluid to leak during system testing if unpressed and provide a perfect leak proof seal when completely pressed. Some models are low-lead brass, for domestic hot water applications.



### Quick Order Code Numbers: 24VAC Normally Closed Actuator and 2-way Valve Body Combinations

	Code	Description	Connection	
 <b>Z45</b>	<b>Z40</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200043 flare body + NA61241 retrofit kit	Inverted	
	<b>Z40F</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200043 flare body + two NA10006 adapters	sweat 3/4"	
	<b>Z42</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200053 flare body	1/2" SAE	
	<b>Z44</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200432 sweat body	1/2"	
	<b>Z44P</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200687 male union body + two NA16264 press fittings	1/2"	
 <b>Z45</b>	<b>Z45</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200537 sweat body	3/4"	
	<b>Z45P</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200687 male union body + two NA16265 press fittings	3/4"	
	<b>Z45PL*</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200687 male union body + one NA16265L press fitting + one NA16265 press fitting	3/4"	
	<b>Z46</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200637 sweat body	1"	
	<b>Z46P</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200687 male union body + two NA16266 press fittings	1"	
 <b>Z47</b>	<b>Z47</b>	Z111000 with auxiliary switch, 18 inch wire connection + Z200737 sweat body	1 1/4"	
	 <b>Z55</b>	<b>Z50</b>	Z151000 with auxiliary switch, screw terminal connection + Z200043 flare body + NA61241 retrofit kit	Inverted
		<b>Z50F</b>	Z151000 with auxiliary switch, screw terminal connection + Z200043 flare body + two NA10006 adapters	sweat 3/4"
		<b>Z54</b>	Z151000 with auxiliary switch, screw terminal connection + Z200432 sweat body	1/2"
		<b>Z54P</b>	Z151000 with auxiliary switch, screw terminal connection + Z200687 male union body + two NA16264 press fittings	1/2"
<b>Z55</b>		Z151000 with auxiliary switch, screw terminal connection + Z200537 sweat body	3/4"	
 <b>Z55P</b>	<b>Z55P</b>	Z151000 with auxiliary switch, screw terminal connection + Z300687 male union body + two NA16265 press fittings	3/4"	
	<b>Z55PL*</b>	Z151000 with auxiliary switch, screw terminal connection + Z300687 male union body + one NA16265L press fitting + one NA16265 press fitting	3/4"	
	<b>Z56</b>	Z151000 with auxiliary switch, screw terminal connection + Z200637 sweat body	1"	
	<b>Z56P</b>	Z151000 with auxiliary switch, screw terminal connection + Z200687 male union body + two NA16266 press fittings	1"	
	<b>Z57</b>	Z151000 with auxiliary switch, screw terminal connection + Z200737 sweat body	1 1/4"	
	<b>NA10005</b>	Inverted flare nut with attached copper sweat tail piece	1/2"	
	<b>NA10006</b>	Inverted flare nut with attached copper sweat tail piece	3/4"	
	<b>NA10007</b>	Inverted flare nut with attached copper sweat tail piece	1"	
	<b>NA61241</b>	Inverted flare extension adapter to retrofit body into an old style asymmetrical zone valve opening	Inverted	
	<b>NA16264</b>	Presscon™ copper press tail piece with 1" brass union nut	1/2"	
	<b>NA16265</b>	Presscon™ copper press tail piece with 1" brass union nut	3/4"	
	<b>NA16265L*</b>	Presscon™ extra long copper press tail piece with 1" brass union nut, for retrofit	3/4"	
	<b>NA16266</b>	Presscon™ copper press tail piece with 1" brass union nut	1"	

\*Models with "L" suffix have one long tailpiece on outlet to provide extra long lay length for retrofit convenience.

**Technical specification**

**Valve body**

Material: - body: forged brass (optional low-lead brass)  
 - seat: machined brass  
 - stem: stainless steel  
 - two o-ring seals and paddle: EPDM

Flow: 1.0, 2.5, 3.5, 5.0, 7.5 Cv  
 Suitable fluids: water and glycol, low pressure steam  
 Maximum percent of glycol: 50%  
 Temperature range: 32 to 240° F (0 to 115° C)  
 Max. static pressure: 15 psi (1 bar) steam  
 300 psi (20 bar)  
 Max. close-off Δ pressure: 20 to 75 psid (138 to 517 kPa)  
 Close-off seat leakage: 100% bubble-tight

Connection: - sweat: ½", ¾" 1" & 1 ¼"  
 - press: ½", ¾" & 1"  
 - NPT female: ½", ¾" & 1"  
 - SAE flare: ½"  
 - inverted flare: ½", ¾" & 1" sweat, fittings separate

Lay length (press connections): size ½ inch: 3 ½"  
 size ¾ inch: 3 ¾"  
 size ¾ inch (PL)\*: 5"  
 size 1 inch: 4 ½"

NSF/ANSI 372-2011, Drinking Water System Components-Lead Content Reduction of Lead in Drinking Water Act, California Health and Safety Code 116875 S.3874, Reduction in Drinking Water Act, certified by ICC-ES, file PMG-1360.

**Actuator**

Material: - base and cover: polycarbonate  
 - base plate: aluminum

Motor: - AC voltage: 24 V - 120 V - 208 V - 230 V - 277 V; 50/60 Hz  
 Power requirements: 5.0 W, 7 VA  
 Power connections: - Terminal screws with auxiliary switch: 24 V only  
 - Wire lead length: 18" (45 cm), 24 V only  
 6" (15 cm), 120, 208, 230, 277 V

Auxiliary micro-switch: 0.0 A min, 0.4 A max, 24 V (24V actuators only)  
 0.25 A min, 5.0 A max, 250 V (120, 208, 230, 277 V actuators)

Ambient temperature range: 32 to 104°F (0 to 40°C) 24, 120 V  
 32 to 170°F (0 to 77°C) 208, 230, 277 V

Humidity: 95% non-condensing  
 Full Stroke Time: - On: <60 seconds  
 - Off: 6 seconds

Approvals: UL873, cUL Listed & CE  
 UL 1995 sec. 18 approved for air plenum and ducts.

Environmental: Indoor only

Power to Normally Open Actuators should be turned off during extended idle periods.

\*Models with "L" suffix have one long tailpiece on outlet to provide extra long lay length for retrofit convenience.

**Z-one Normally Closed Valve Actuators**

Code	Description
Z111000	24V with auxiliary micro-switch 18" wire
Z116000	120V with auxiliary micro-switch 6" wire
Z113000	208V with auxiliary micro-switch 6" wire
Z114000	230V with auxiliary micro-switch 6" wire
Z115000	277V with auxiliary micro-switch 6" wire
Z151000	24V w/auxiliary micro-switch terminal block
Z161000	24V w/o auxiliary micro-switch terminal block
Z121000	24V without auxiliary micro-switch 18" wire
Z126000	120V without auxiliary micro-switch 6" wire
Z123000	208V without auxiliary micro-switch 6" wire
Z124000	230V without auxiliary micro-switch 6" wire
Z125000	277V without auxiliary micro-switch 6" wire

**Z-one Normally Open Valve Actuators**

Code	Description
Z131000	24V with auxiliary micro-switch 18" wire
Z136000	120V with auxiliary micro-switch 6" wire
Z133000	208V with auxiliary micro-switch 6" wire
Z134000	230V with auxiliary micro-switch 6" wire
Z135000	277V with auxiliary micro-switch 6" wire
Z141000	24V without auxiliary micro-switch 18" wire
Z146000	120V without auxiliary micro-switch 6" wire
Z143000	208V without auxiliary micro-switch 6" wire
Z144000	230V without auxiliary micro-switch 6" wire
Z145000	277V without auxiliary micro-switch 6" wire

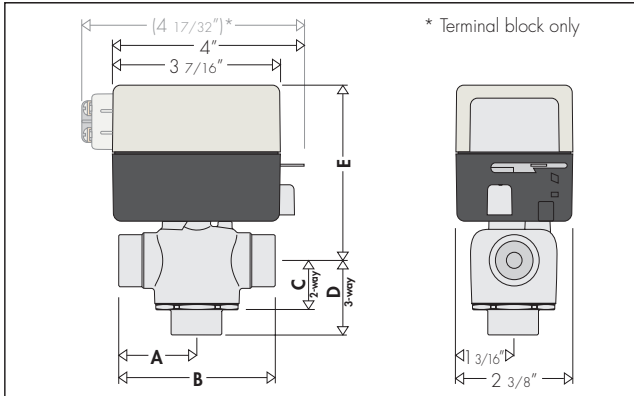
**Z-one 2-way Valve Bodies**

Code	Description	Cv	ΔP
Z200041	Inverted flare	1.0	75 psi
Z200042	Inverted flare	2.5	50 psi
Z200043	Inverted flare	3.5	30 psi
Z200053	1/2" SAE flare	3.5	30 psi
Z200411	1/2" NPT	1.0	75 psi
Z200412	1/2" NPT	2.5	50 psi
Z200413	1/2" NPT	3.5	30 psi
Z200431	1/2" sweat	1.0	75 psi
Z200432	1/2" sweat	2.5	50 psi
Z207433	1/2" sweat low-lead brass	3.5	30 psi
Z200512	3/4" NPT	2.5	50 psi
Z200513	3/4" NPT	3.5	30 psi
Z200515	3/4" NPT	5.0	25 psi
Z200517	3/4" NPT	7.5	20 psi
Z200532	3/4" sweat	2.5	50 psi
Z207533	3/4" sweat low-lead brass	3.5	30 psi
Z200535	3/4" sweat	5.0	25 psi
Z200537	3/4" sweat	7.5	20 psi
Z207537	3/4" sweat low-lead brass	7.5	20 psi
Z200617	1" NPT	7.5	20 psi
Z200635	1" sweat	5.0	25 psi
Z200637	1" sweat	7.5	20 psi
Z200737	1-1/4" sweat	7.5	20 psi
Z200687	1" male union	7.5	20 psi

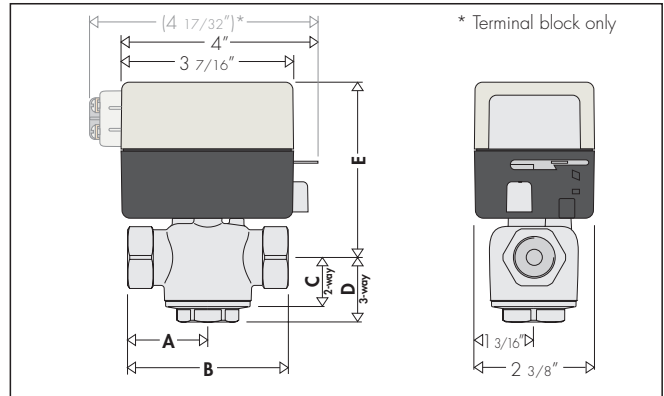
**Z-one 3-way Valve Bodies**

Code	Description	Cv	ΔP
Z300041	Inverted flare	1.0	75 psi
Z300042	Inverted flare	2.5	50 psi
Z300043	Inverted flare	3.5	30 psi
Z300053	1/2" SAE flare	3.5	30 psi
Z300411	1/2" NPT	1.0	75 psi
Z300412	1/2" NPT	2.5	50 psi
Z300413	1/2" NPT	3.5	30 psi
Z300431	1/2" sweat	1.0	75 psi
Z300432	1/2" sweat	2.5	50 psi
Z307433	1/2" sweat low-lead brass	3.5	30 psi
Z300512	3/4" NPT	2.5	50 psi
Z300513	3/4" NPT	3.5	30 psi
Z300515	3/4" NPT	5.0	25 psi
Z300517	3/4" NPT	7.5	20 psi
Z300532	3/4" sweat	2.5	50 psi
Z300533	3/4" sweat	3.5	30 psi
Z300535	3/4" sweat	5.0	25 psi
Z307537	3/4" sweat low-lead brass	7.5	20 psi
Z300617	1" NPT	7.5	20 psi
Z300635	1" sweat	5.0	25 psi
Z300637	1" sweat	7.5	20 psi
Z300737	1-1/4" sweat	7.5	20 psi
Z300687	1" male union	7.5	20 psi

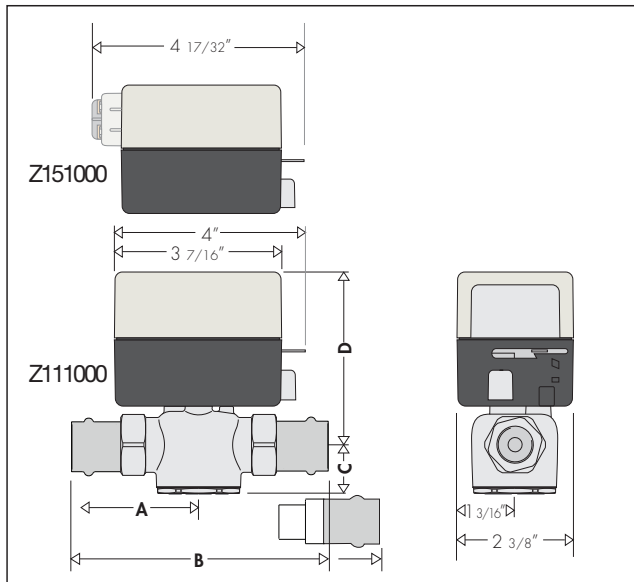
## Dimensions



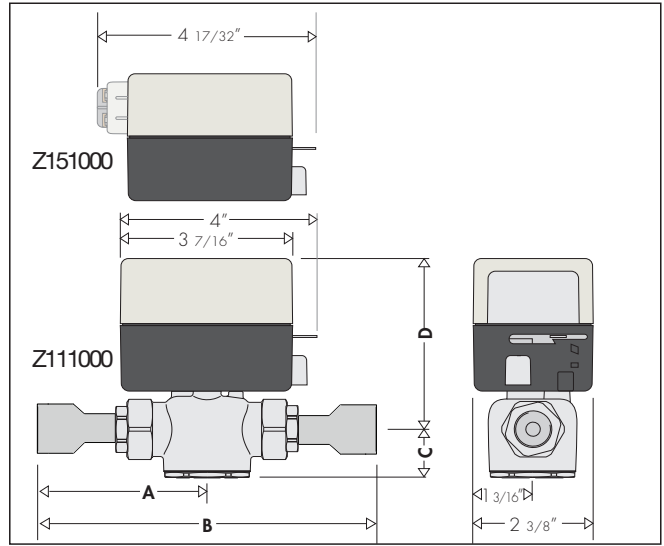
Connections	A	B	C	D	E
½" sweat	1 <sup>5</sup> / <sub>16</sub> "	2 <sup>5</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	1 <sup>5</sup> / <sub>16</sub> "	3½"
¾" sweat	1 <sup>3</sup> / <sub>8</sub> "	2¾"	1 <sup>5</sup> / <sub>16</sub> "	1½"	3½"
1" sweat	1 <sup>11</sup> / <sub>16</sub> "	3 <sup>3</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	1 <sup>9</sup> / <sub>16</sub> "	3 <sup>11</sup> / <sub>16</sub> "
1¼" sweat	1 <sup>13</sup> / <sub>16</sub> "	3 <sup>5</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	1 <sup>11</sup> / <sub>16</sub> "	3 <sup>11</sup> / <sub>16</sub> "



Connections	A	B	C	D	E
½" NPT	1 <sup>7</sup> / <sub>16</sub> "	2 <sup>7</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	1¼"	3½"
¾" NPT	1 <sup>9</sup> / <sub>16</sub> "	3 <sup>1</sup> / <sub>16</sub> "	1 <sup>5</sup> / <sub>16</sub> "	1¼"	3 <sup>11</sup> / <sub>16</sub> "
1" NPT	1 <sup>13</sup> / <sub>16</sub> "	3 <sup>5</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	1 <sup>11</sup> / <sub>16</sub> "	3 <sup>11</sup> / <sub>16</sub> "
inverted flare	1 <sup>3</sup> / <sub>8</sub> "	2¾"	1 <sup>5</sup> / <sub>16</sub> "	1¼"	3½"
w/ adapter (NA61241)	1 <sup>3</sup> / <sub>8</sub> "	3½"	1 <sup>5</sup> / <sub>16</sub> "	1¼"	3½"

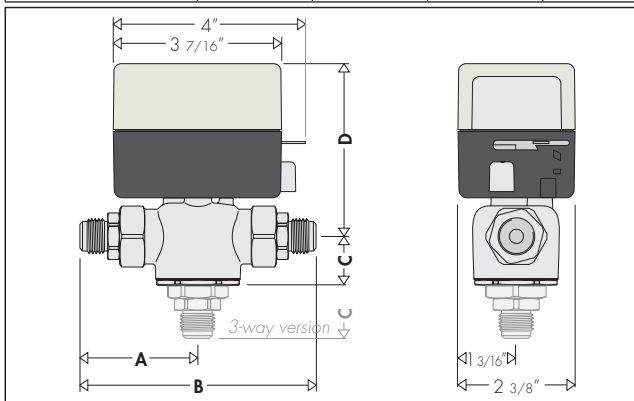


Connections	A	B	C	D
½" press	2½"	5"	1 <sup>5</sup> / <sub>16</sub> "	3½"
¾" press	2 <sup>13</sup> / <sub>16</sub> "	5 <sup>5</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	3½"
¾" press extra long	2 <sup>13</sup> / <sub>16</sub> "	7"	1 <sup>5</sup> / <sub>16</sub> "	3½"
1" press	2 <sup>15</sup> / <sub>16</sub> "	5 <sup>7</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	3½"



Connections	A	B	C	D
Z40/50F ½" sweat	2 <sup>7</sup> / <sub>8</sub> "	5¾"	1 <sup>5</sup> / <sub>16</sub> "	3½"
Z40/50F ¾" sweat	3 <sup>5</sup> / <sub>16</sub> "	6 <sup>5</sup> / <sub>8</sub> "	1 <sup>5</sup> / <sub>16</sub> "	3½"
Z40/50F 1" sweat	3 <sup>5</sup> / <sub>8</sub> "	6¾"	1 <sup>5</sup> / <sub>16</sub> "	3½"

\*Inverted flare bodies ( 7/8" UNS female threads) with 2 attached copper sweat tailpieces:  
 ½" = Z20004X + (2) NA10005 field assembled  
 ¾" = Z20004Z + (2) NA10006, Z40F or Z50F Quick Order Codes  
 1" = Z20004X + (2) NA10007 field assembled



Connections	A	B	C	D
2-way ½" SAE flare	2 <sup>11</sup> / <sub>32</sub> "	4 <sup>11</sup> / <sub>16</sub> "	1 <sup>5</sup> / <sub>16</sub> "	3½"
3-way ½" SAE flare	2 <sup>11</sup> / <sub>32</sub> "	4 <sup>11</sup> / <sub>16</sub> "	2 <sup>1</sup> / <sub>8</sub> "	3½"

## Operating principle

The Z-one actuator has a synchronous motor that winds the return spring and moves the valve paddle to the desired position. When power is removed the actuator spring returns the valve paddle. The Zone actuator is equipped with or without auxiliary micro-switch.

## Operation of normally closed valve

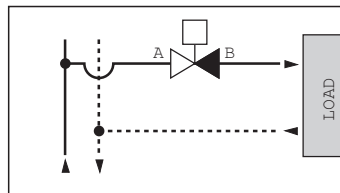
	2-way	3-way
N.C. without power	Port "A" closed	Port "A" closed Port "B" open Port "AB" open
N.C. opened with power	Port "A" open	Port "A" open Port "B" closed Port "AB" open
N.C. manually opened	Port "A" open	Port "A" open Port "B" open Port "AB" open

### 2-way

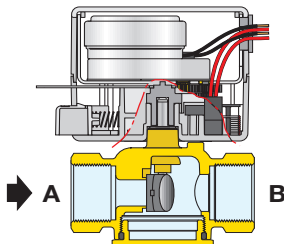
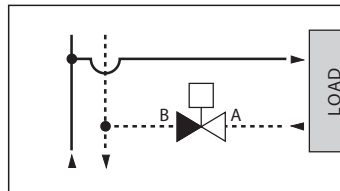
(with the power off, passage A is closed, when using a normally closed actuator)



### 2-way installed on the flow side



### 2-way installed on the return side

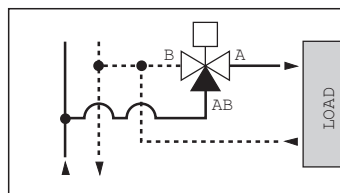


### 3-way

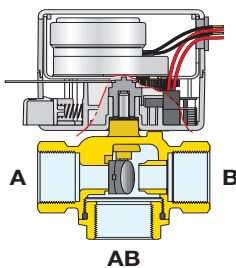
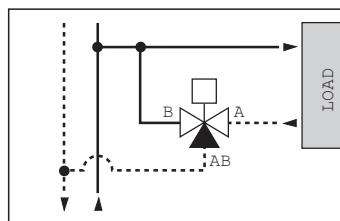
(with the power off, passage A is closed)



### 3-way installed on the flow side as a diverting valve configuration



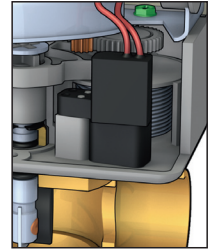
### 3-way installed on the return side as a mixing valve configuration



## Construction details

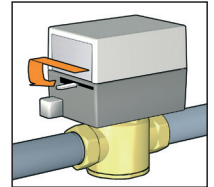
### • Auxiliary micro-switch

The actuator contains an auxiliary micro-switch to operate other devices. The 24 V actuators use a sealed reed switch, which has been produced specifically for use with relays, boiler contacts (TT) and DDC systems. It requires no minimum current load. The 120 V to 277 V actuators use a conventional micro-switch with silver contacts. The auxiliary micro-switch is activated when the valve is 60% open or when the actuator is manually opened.



### • Manual opening (Normally closed actuator only)

Use the manual opening lever to open the valve. When the power is restored the manual control is automatically overridden. The auxiliary micro-switch in 24 V actuators is tripped when the unit is put into manual open position. This helps during start up to check if the wiring is correct without firing the valve electrically with the thermostat. Note: The manual open lever travels through nearly all of the actuator stroke, providing a good indicator of the valve's position.



### • Easy push button

A simple push of the button makes it easy to remove the actuator from the body of the valve for maintenance or replacement operations. Warning: the actuator can only be used with valve bodies Z2-Z3 series.

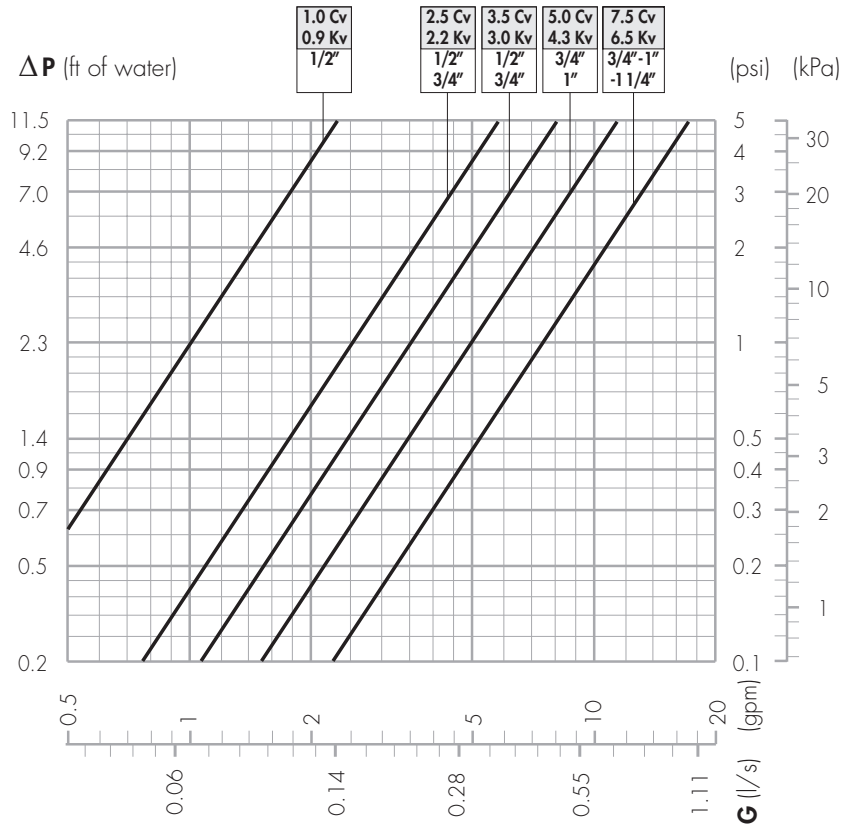
### • Operation

The actuator uses a special mechanism for gradual movement of the valve paddle which provides smooth and quiet constant operation. Power-on full stroke run time is 60 seconds with 6 second power-off return time eliminating the effects of water hammer.

### • Innovative motion

When power is delivered to the actuator, the motor drives a series of gears against a pre-wound torsion spring until it reaches its fully stroked position. When power is dropped to the actuator, the torsion spring back drives the motor and gear train until the unit returns to its normal position. A lost motion mechanism disengages the motor from the gear train at the end of stroke to prevent the impact that would occur in directly coupled gears. This allows the Z-one actuator to have high spring force resulting in higher close-off pressures without compromising motor and gear longevity.

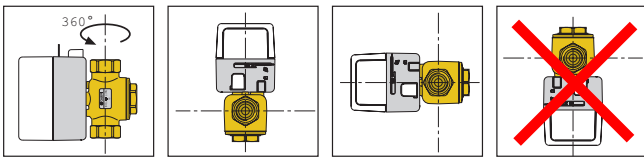
## Hydraulic characteristics



Connection size	Flow coefficient	Max. Close-off $\Delta P$
1/2"	1.0 Cv (0.9 Kv)	75 psi (517 kPa)
1/2" - 3/4"	2.5 Cv (2.2 Kv)	50 psi (345 kPa)
1/2" - 3/4"	3.5 Cv (3.0 Kv)	30 psi (207 kPa)
3/4" - 1"	5.0 Cv (4.3 Kv)	25 psi (172 kPa)
3/4" - 1" - 1 1/4"	7.5 Cv (6.5 Kv)	20 psi (138 kPa)

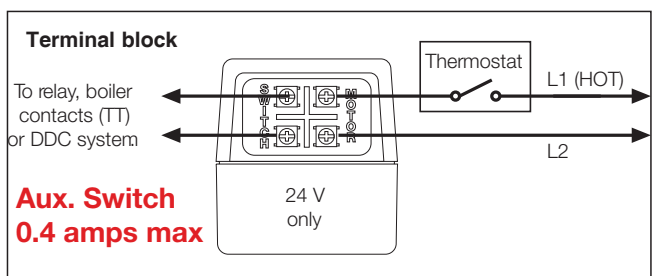
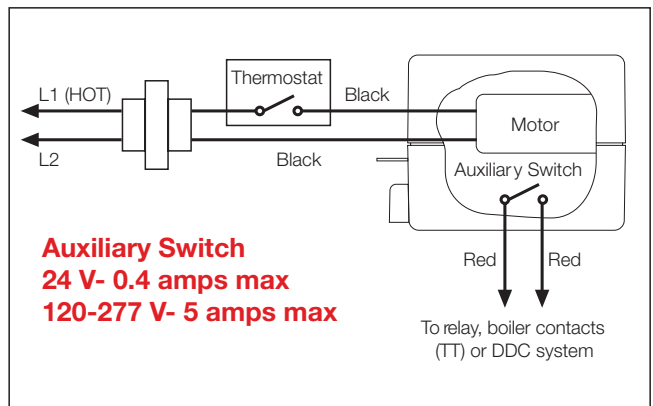
## Installation

- The valve can be installed either vertically or horizontally, with the actuator in any position, **except upside down**.



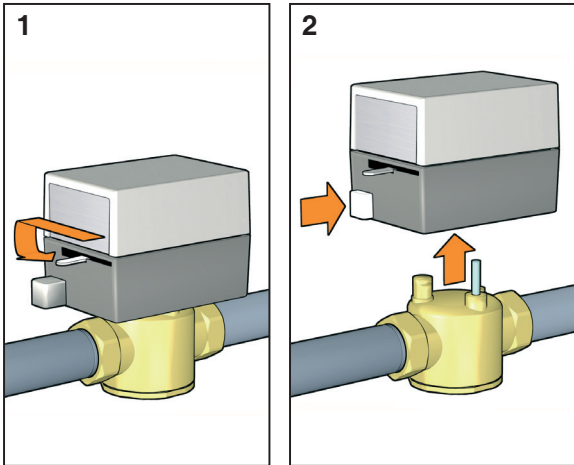
- If it is installed inside an enclosure it is important to ensure that there is adequate ventilation inside the enclosure itself.
- The three-way valve cannot be transformed into a two-way valve and vice versa.
- When zone valves are installed, the direction of flow must be observed.
- Two-way zone valves can be installed either in the supply or return piping; the direction of flow indicated by the arrow on the body of the valve must be observed.
- Three-way zone valves use the normally closed actuator only (rotate 180° the valve body for normally open application).

## Wiring diagram



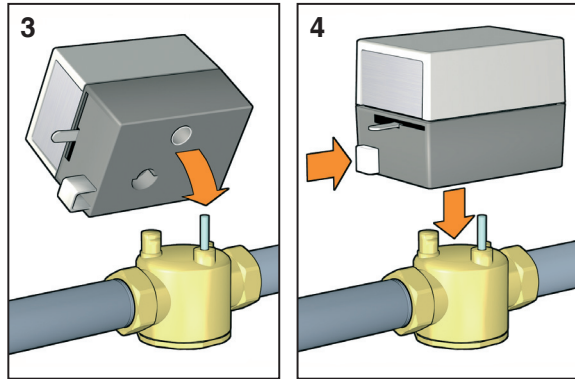
### Remove the actuator

1. Move the manual open lever to the lock open position.
2. Press the push button in and pull the actuator up.



### Install the actuator

1. Move the manual open lever to the lock open position.
3. Verify the correct position of the valve stem into the mating actuator hole. Move stem if required to align.
4. Press the push button in and slide the actuator onto the valve body, release the push button.



### Repair parts and accessories



Two-way and three-way zone valve body repair kit. Includes valve stem paddle with O-rings, C clip and one bottom cap O-ring.

Code	Description
<b>F69293</b>	Repair kit for all 1/2" & 3/4" sweat Z2, Z3 valves
<b>F69294</b>	Repair kit for 3/4" NPT and all 1" Z2, Z3 valves



### NA605

Wall transformer.  
Input voltage: 120 V AC  
Output voltage: 24 V AC.  
Power output: 40 VA.  
Agency approval: cULus

Code	Description
<b>NA605010</b>	24 VAC wall transformer

## Z-one Normally Closed Valve Actuators & 2-way Valve Body Combinations Matrix

actuator body	Z111000	Z116000	Z113000	Z114000	Z115000	Z151000	Z161000	Z121000	Z126000	Z123000	Z124000	Z125000
Z200041*	Z411041	Z416041	Z413041	Z414041	Z415041	Z451041	Z461041	Z421041	Z426041	Z423041	Z424041	Z425041
Z200042*	Z411042	Z416042	Z413042	Z414042	Z415042	Z451042	Z461042	Z421042	Z426042	Z423042	Z424042	Z425042
Z200043*	Z411043	Z416043	Z413043	Z414043	Z415043	Z451043	Z461043	Z421043	Z426043	Z423043	Z424043	Z425043
Z200053	Z42	Z416053	Z413053	Z414053	Z415053	Z451053	Z461053	Z421053	Z426053	Z423053	Z424053	Z425053
Z200411	Z411411	Z416411	Z413411	Z414411	Z415411	Z451411	Z461411	Z421411	Z426411	Z423411	Z424411	Z425411
Z200412	Z411412	Z416412	Z413412	Z414412	Z415412	Z451412	Z461412	Z421412	Z426412	Z423412	Z424412	Z425412
Z200413	Z411413	Z416413	Z413413	Z414413	Z415413	Z451413	Z461413	Z421413	Z426413	Z423413	Z424413	Z425413
Z200431	Z411431	Z416431	Z413431	Z414431	Z415431	Z451431	Z461431	Z421431	Z426431	Z423431	Z424431	Z425431
Z200432	Z44	Z416432	Z413432	Z414432	Z415432	Z54	Z461432	Z421432	Z426432	Z423432	Z424432	Z425432
Z207433**	Z411433	Z416433	Z413433	Z414433	Z415433	Z451433	Z461433	Z421433	Z426433	Z423433	Z424433	Z425433
Z200512	Z411512	Z416512	Z413512	Z414512	Z415512	Z451512	Z461512	Z421512	Z426512	Z423512	Z424512	Z425512
Z200513	Z411513	Z416513	Z413513	Z414513	Z415513	Z451513	Z461513	Z421513	Z426513	Z423513	Z424513	Z425513
Z200515	Z411515	Z416515	Z413515	Z414515	Z415515	Z451515	Z461515	Z421515	Z426515	Z423515	Z424515	Z425515
Z200517	Z411517	Z416517	Z413517	Z414517	Z415517	Z451517	Z461517	Z421517	Z426517	Z423517	Z424517	Z425517
Z200532	Z411532	Z416532	Z413532	Z414532	Z415532	Z451532	Z461532	Z421532	Z426532	Z423532	Z424532	Z425532
Z207533**	Z411533	Z416533	Z413533	Z414533	Z415533	Z451533	Z461533	Z421533	Z426533	Z423533	Z424533	Z425533
Z200535	Z411535	Z416535	Z413535	Z414535	Z415535	Z451535	Z461535	Z421535	Z426535	Z423535	Z424535	Z425535
Z207537**	Z45	Z416537	Z413537	Z414537	Z415537	Z55	Z461537	Z421537	Z426537	Z423537	Z424537	Z425537
Z200617	Z411617	Z416617	Z413617	Z414617	Z415617	Z451617	Z461617	Z421617	Z426617	Z423617	Z424617	Z425617
Z200635	Z411635	Z416635	Z413635	Z414635	Z415635	Z451635	Z461635	Z421635	Z426635	Z423635	Z424635	Z425635
Z200637	Z46	Z416637	Z413637	Z414637	Z415637	Z56	Z461637	Z421637	Z426637	Z423637	Z424637	Z425637
Z200737	Z47	Z416737	Z413737	Z414737	Z415737	Z57	Z461737	Z421737	Z426737	Z423737	Z424737	Z425737
Z200687*	Z411687	Z416687	Z413687	Z414687	Z415687	Z451687	Z461687	Z42687	Z426687	Z423687	Z412687	Z425687

\*Order inverted flare nut w/ attached copper sweat tailpieces or press fittings separately. \*\*Low-lead brass body.

## Z-one Normally Closed Valve Actuators & 3-way Valve Body Combinations Matrix

actuator body	Z111000	Z116000	Z113000	Z114000	Z115000	Z151000	Z161000	Z121000	Z126000	Z123000	Z124000	Z125000
Z300041*	Z611041	Z616041	Z613041	Z614041	Z615041	Z651041	Z661041	Z621041	Z626041	Z623041	Z624041	Z625041
Z300042*	Z611042	Z616042	Z613042	Z614042	Z615042	Z651042	Z661042	Z621042	Z626042	Z623042	Z624042	Z625042
Z300043*	Z611043	Z616043	Z613043	Z614043	Z615043	Z651043	Z661043	Z621043	Z626043	Z623043	Z624043	Z625043
Z300053	Z611053	Z616053	Z613053	Z614053	Z615053	Z651053	Z661053	Z621053	Z626053	Z623053	Z624053	Z625053
Z300411	Z611411	Z616411	Z613411	Z614411	Z615411	Z651411	Z661411	Z621411	Z626411	Z623411	Z624411	Z625411
Z300412	Z611412	Z616412	Z613412	Z614412	Z615412	Z651412	Z661412	Z621412	Z626412	Z623412	Z624412	Z625412
Z300413	Z611413	Z616413	Z613413	Z614413	Z615413	Z651413	Z661413	Z621413	Z626413	Z623413	Z624413	Z625413
Z300431	Z611431	Z616431	Z613431	Z614431	Z615431	Z651431	Z661431	Z621431	Z626431	Z623431	Z624431	Z625431
Z300432	Z611432	Z616432	Z613432	Z614432	Z615432	Z651432	Z661432	Z621432	Z626432	Z623432	Z624432	Z625432
Z307433**	Z611433	Z616433	Z613433	Z614433	Z615433	Z651433	Z661433	Z621433	Z626433	Z623433	Z624433	Z625433
Z300512	Z611512	Z616512	Z613512	Z614512	Z615512	Z651512	Z661512	Z621512	Z626512	Z623512	Z624512	Z625512
Z300513	Z611513	Z616513	Z613513	Z614513	Z615513	Z651513	Z661513	Z621513	Z626513	Z623513	Z624513	Z625513
Z300515	Z611515	Z616515	Z613515	Z614515	Z615515	Z651515	Z661515	Z621515	Z626515	Z623515	Z624515	Z625515
Z300517	Z611517	Z616517	Z613517	Z614517	Z615517	Z651517	Z661517	Z621517	Z626517	Z623517	Z624517	Z625517
Z300532	Z611532	Z616532	Z613532	Z614532	Z615532	Z651532	Z661532	Z621532	Z626532	Z623532	Z624532	Z625532
Z300533	Z611533	Z616533	Z613533	Z614533	Z615533	Z651533	Z661533	Z621533	Z626533	Z623533	Z624533	Z625533
Z300535	Z611535	Z616535	Z613535	Z614535	Z615535	Z651535	Z661535	Z621535	Z626535	Z623535	Z624535	Z625535
Z307537**	Z611537	Z616537	Z613537	Z614537	Z615537	Z651537	Z661537	Z621537	Z626537	Z623537	Z624537	Z625537
Z300617	Z611617	Z616617	Z613617	Z614617	Z615617	Z651617	Z661617	Z621617	Z626617	Z623617	Z624617	Z625617
Z300635	Z611635	Z616635	Z613635	Z614635	Z615635	Z651635	Z661635	Z621635	Z626635	Z623635	Z624635	Z625635
Z300637	Z611637	Z616637	Z613637	Z614637	Z615637	Z651637	Z661637	Z621637	Z626637	Z623637	Z624637	Z625637
Z300737	Z611737	Z616737	Z613737	Z614737	Z615737	Z651737	Z661737	Z621737	Z626737	Z623737	Z624737	Z625737
Z300687*	Z611687	Z616687	Z613687	Z614687	Z615687	Z651687	Z661687	Z621687	Z626687	Z623687	Z624687	Z625687

\*Order inverted flare nut w/ attached copper sweat tailpieces or press fittings separately. \*\*Low-lead brass body.

## Z-one Normally Open Valve Actuators & 2-way Valve Body Combinations Matrix

actuator body	Z131000	Z136000	Z133000	Z134000	Z135000	Z141000	Z146000	Z143000	Z144000	Z145000
<b>Z200041*</b>	Z431041	Z436041	Z433041	Z434041	Z435041	Z441041	Z446041	Z443041	Z444041	Z445041
<b>Z200042*</b>	Z431042	Z436042	Z433042	Z434042	Z435042	Z441042	Z446042	Z443042	Z444042	Z445042
<b>Z200043*</b>	Z431043	Z436043	Z433043	Z434043	Z435043	Z441043	Z446043	Z443043	Z444043	Z445043
<b>Z200053</b>	Z431053	Z436053	Z433053	Z434053	Z435043	Z441053	Z446053	Z443053	Z444053	Z445053
<b>Z200411</b>	Z431411	Z436411	Z433411	Z434411	Z435411	Z441411	Z446411	Z443411	Z444411	Z445411
<b>Z200412</b>	Z431412	Z436412	Z433412	Z434412	Z435412	Z441412	Z446412	Z443412	Z444412	Z445412
<b>Z200413</b>	Z431413	Z436413	Z433413	Z434413	Z435413	Z441413	Z446413	Z443413	Z444413	Z445413
<b>Z200431</b>	Z431431	Z436431	Z433431	Z434431	Z435431	Z441431	Z446431	Z443431	Z444431	Z445431
<b>Z200432</b>	Z431432	Z436432	Z433432	Z434432	Z435432	Z441432	Z446432	Z443432	Z444432	Z445432
<b>Z207433**</b>	Z431433	Z436433	Z433433	Z434433	Z435433	Z441433	Z446433	Z443433	Z444433	Z445433
<b>Z200512</b>	Z431512	Z436512	Z433512	Z434512	Z435512	Z441512	Z446512	Z443512	Z444512	Z445512
<b>Z200513</b>	Z431513	Z436513	Z433513	Z434513	Z435513	Z441513	Z446513	Z443513	Z444513	Z445513
<b>Z200515</b>	Z431515	Z436515	Z433515	Z434515	Z435515	Z441515	Z446515	Z443515	Z444515	Z445515
<b>Z200517</b>	Z431517	Z436517	Z433517	Z434517	Z435517	Z441517	Z446517	Z443517	Z444517	Z445517
<b>Z200532</b>	Z431532	Z436532	Z433532	Z434532	Z435532	Z441532	Z446532	Z443532	Z444532	Z445532
<b>Z207533**</b>	Z431533	Z436533	Z433533	Z434533	Z435533	Z441533	Z446533	Z443533	Z444533	Z445533
<b>Z200535</b>	Z431535	Z436535	Z433535	Z434535	Z435535	Z441535	Z446535	Z443535	Z444535	Z445535
<b>Z207537**</b>	Z431537	Z436537	Z433537	Z434537	Z435537	Z441537	Z446537	Z443537	Z444537	Z445537
<b>Z200617</b>	Z431617	Z436617	Z433617	Z434617	Z435617	Z441617	Z446617	Z443617	Z444617	Z445617
<b>Z200635</b>	Z431635	Z436635	Z433635	Z434635	Z435635	Z441635	Z446635	Z443635	Z444635	Z445635
<b>Z200637</b>	Z431637	Z436637	Z433637	Z434637	Z435637	Z441637	Z446637	Z443637	Z444637	Z445637
<b>Z200737</b>	Z431737	Z436737	Z433737	Z434737	Z435737	Z441737	Z446737	Z443737	Z444737	Z445737
<b>Z200687*</b>	Z431687	Z436687	Z433687	Z434687	Z435687	Z441687	Z446687	Z443687	Z444687	Z445687

\*Order inverted flare nut w/ attached copper sweat tailpieces or press fittings separately. \*\*Low-lead brass body.

To use the above tables follow this example: Select actuator Z131000 from the top row combined with body Z200041 from left column to create the combination Z431041.

## SPECIFICATION SUMMARY

The Z-one series two-position spring return with removable actuator zone valve. Z1 series actuator is normally closed (NC) or normally open (NO) 24 V to 277 V 50/60 Hz, 6.5 W, 7 VA, with or without auxiliary micro-switch {(24 V: 0.4A max, 24 V) (120-277 V: 5.0A, 250 V)}, Auxiliary micro-switch for 24 V actuator is a sealed reed switch requiring no minimum current load, includes leads or terminal block (24 V only); Lost motion transmission disengagement actuation mechanism; Quick-connect actuator-to-valve body assembly (no fastener); operating temperature from 32 to 104 deg F (0 to 40 deg C) for 24 V and 120 V actuators; 32 to 170 deg F (0 to 77 deg C) for 208 V, 230 V, 277 V actuators. Z2 (2-way) series and Z3 (3-way) series are forged brass (2-way and 3-way 1/2" and 3/4" sweat valve bodies pn Z207433, Z307433, Z207533, Z207537 and Z307537 are low-lead brass [<0.25% lead content] certified by ICC-ES file 1360). Valve body rated at 300 psi (20 bar), 15 psi (1 bar) steam. Temperature rated 32 to 240 deg F (0 to 115 deg C). Valve stem stainless steel, EPDM seals, flows: 1.0, 2.5, 3.5, 5.0 or 7.5 Cv. Close-off seat leakage: 100% bubble-tight. Connections and sizes: 1/2", 3/4", 1" and 1 1/4" sweat or 1/2", 3/4" and 1" NPT female threads, 1/2" SAE flare, inverted flare, 1" straight male threaded union, and 1/2", 3/4" and 1" press with unions. Actuator approved to UL 873, cUL listed and CE, and UL 1995 section 18 air plenum and ducts rating. US Patent 7,048,251.

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice.



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