

Z-One™ Zone Valves

Z Series

Submittal Data 02917 NA — Issue Date 10/2011



Application

The Z-one, a two-position spring return zone valve, is used in heating and air-conditioning systems. The Z-one series consist of a Z1 actuator which is easily attached to a Z2 (2-way) or Z3 (3-way) valve body. Z1 actuator is equipped with or without auxiliary switch and is UL Listed for plenum installations. Z1 actuator + Z2 body = Z4 combination and Z1 actuator + Z3 body = Z6 combination.

- US Patent 7,048,251; others pending

Typical Specification

Furnish and install on the plans and describing herein, a Caleffi Z-one zone valve as manufactured by Caleffi. Each zone valve must be designed with forged brass valve body rated at 300 psi, stainless steel valve stem, and seals in EPDM. When an auxiliary switch is specified in the 24V actuator, the zone valve design must include a sealed reed switch. Approved for air plenum and ducts per UL 1995 section 18. Each zone valve shall be Caleffi model Z-one series or approval equal. (See product instructions for specific installation information.)

Technical Data

Valve body material:

- Body: forged brass, (optional lead-free brass-IAPMO R&T certified)
- seat: machined brass
- stem: stainless steel
- two o-ring seals and paddle: EPDM

Flow: from 1 to 7.5 Cv

Medium: water and glycol, low pressure steam

Maximum percent of glycol: 50%

Temperature range: 32 to 240°F (0 - 115°C)

Max. static pressure: 15 psi (1 bar) steam

300 psi (20 bar)

Connection:

- sweat: 1/2", 3/4", 1" & 1 1/4"
- NPT female: 1/2", 3/4" & 1"
- SAE flare: 1/2"
- inverted flare: 1/2", 3/4" & 1" sweat fittings purchased separately

Actuator material:

- base and cover: polycarbonate
- base plate: aluminum

Motor: -AC voltage: 24V - 120V - 208V - 230V - 277V; 50/60 Hz

- Current draw: 24 VAC - 300 mA; 120 VAC; 55 mA;
208 VAC - 30 mA; 230 VAC - 25 mA;
277 VAC - 20 mA

- Terminal block with auxiliary switch: 24 V - class 2 - 5-/60 Hz

Wire lead length: 6" (15 cm), 24 V only 18" (45 cm)

Power requirements: 5 W, 7 VA

Ambient temperature range: 24 V, 120 V: 32 to 104°F

208 V, 230 V, 277 V: 32 to 170°F

Auxiliary switch: 0.0 A min. - 0.4 max., 24 V (24 V actuators)

5.0 A, 250 V (120, 208, 230, 277 V actuator)

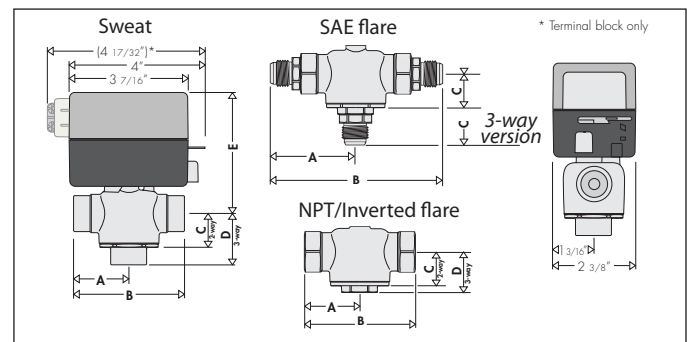
Humidity: 95% non-condensing

Full stroke time: - On: <60 seconds

Approvals: UL873, cUL listed & CE

UL 1995 sec. 18: Air plenums & duct

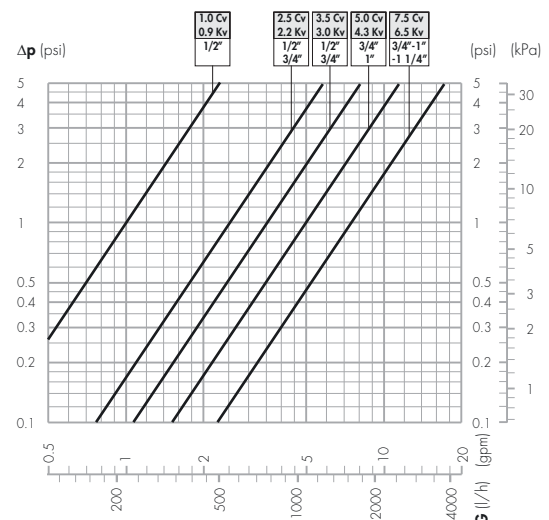
Dimensions



Connections	A	B	C	D	E
1/2" sweat	1 5/16"	2 5/8"	15/16"	1 5/16"	3 1/2"
3/4" sweat	1 3/8"	2 3/4"	15/16"	1 1/2"	3 1/2"
1" sweat	1 11/16"	3 3/8"	15/16"	1 9/16"	3 11/16"
1 1/4" sweat	1 13/16"	3 5/8"	15/16"	1 11/16"	3 11/16"
1/2" NPT	1 7/16"	2 7/8"	15/16"	1 1/4"	3 1/2"
3/4" NPT	1 9/16"	3 1/16"	15/16"	1 1/4"	3 11/16"
1" NPT	1 13/16"	3 5/8"	15/16"	1 11/16"	3 11/16"
Inverted flare	1 3/8"	2 3/4"	15/16"	1 1/4"	3 1/2"
with adapter (NA61241)	1 3/8"	3 1/2"	15/16"	1 1/4"	3 1/2"
	A	B	C	D	
2-way 1/2" SAE Flare	2 11/32"	4 11/16"	15/16"	3 1/2"	
3-way 1/2" SAE Flare	2 11/32"	4 11/16"	2 1/8"	3 1/2"	

Connection size	Flow coefficient	Max. Close-off ΔP
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)

Hydraulic characteristics



We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice. Contractors should request production drawings if prefabricating the system.

Job name _____
 Job location _____
 Engineer _____
 Mechanical contractor _____
 Contractor's P.O. No. _____
 Representative _____

Size _____
 Quantity _____
 Approval _____
 Service _____
 Tag No. _____
 Notes _____

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Z-One™ Zone Valves

Z-Series Low-lead Brass

Submittal Data 02917.1 NA — Issue Date 04/2012

Application

The Z-one, a two-position spring return zone valve, is suitable for use in potable water systems. The Z-one series consist of a Z1 actuator which is easily attached to a Z2 (2-way) or Z3 (3-way) valve body. Z1 actuator is equipped with or without auxiliary switch and UL listed for plenum installations. Z1 actuator + Z2 body = Z4 combination and Z1 actuator + Z3 body = Z6 combination. Also suitable for high boiler feedwater makeup and open system applications.

• US Patent 7,048,251; others pending

Typical Specification

Furnish and install on the plans and described herein, a Caleffi Z-one zone valve as manufactured by Caleffi. Each zone valve must be designed with forged lead-free brass valve body rated at 300 psi, stainless steel valve stem, and seals in EPDM. When an auxiliary switch is specified in the 24V actuator, the zone valve design must include a sealed reed switch. Approved for air plenums and ducts per UL1995 section 18. Each zone valve shall be Caleffi model Z-one series or approved equal. (See product instructions for specific installation information.)

Technical Data

Valve body material:
 - body: lead-free brass (<0.25% lead content)
 - seat: machined brass
 - stem: stainless steel
 - two o-ring seals and paddle: EPDM
 Flow: 3.5 Cv & 7.5 Cv
 Medium: water and glycol, low pressure steam
 Maximum percent of glycol: 50%
 Temperature range: 32 to 240°F (0 – 115°C)
 Max. static pressure: 15 psi (1 bar) steam
 300 psi (20 bar)

Connection:
 - sweat: 1/2" & 3/4"

Agency approval:
 Lead plumbing law compliance: (0.25% Max. weighted average lead content)
 Lead plumbing law certified by IAPMO R&T

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
 - Current Draw: 24 VAC- 300 mA; 120 VAC;
 55 mA; 208 VAC- 30 mA;
 230 VAC- 25 mA; 277 VAC- 20 mA

- Terminal block with auxiliary switch: 24 V - class 2 - 50/60 Hz
 Wire lead length: 6" (15 cm), 24 V only 18" (45 cm)
 Power requirements: 5 W, 7 VA

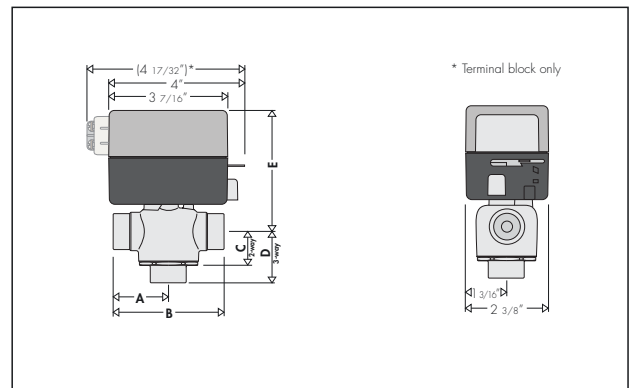
Ambient temperature range: 24 V, 120 V: 32 to 104°F
 208 V, 230 V, 277 V: 32 to 170°F

Auxiliary switch: 0.0 A min. 0.4 max., 24 V (24V actuators)
 5.0 A, 250 V (120, 208, 230, 277 V actuators)
 Humidity: 95% non-condensing

Full Stroke Time:
 - On: <60 seconds
 - Off: 6 seconds

Approvals: UL873, cUL Listed & CE
 UL 1995 sec. 18: Air plenums & duct

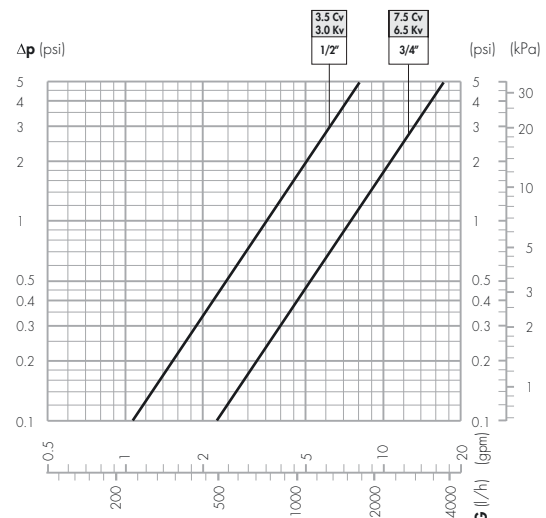
Dimensions



Connections	A	B	C	D	E
1/2" sweat	1 5/16"	2 5/8"	15/16"	1 5/16"	3 1/2"
3/4" sweat	1 3/8"	2 3/4"	15/16"	1 1/2"	3 1/2"

Code Number	Description	Flow Coefficient	Max. Closeoff ΔP
Z207433	2-way 1/2" Sweat	3.5 Cv (3.0 Kv)	30 psi (207 kPa)
Z207537	2-way 3/4" Sweat	7.5 Cv (6.5 Kv)	20 psi (138 kPa)
Z307433	3-way 1/2" Sweat	3.5 Cv (3.0 Kv)	30 psi (207 kPa)
Z307537	3-way 3/4" Sweat	7.5 Cv (6.5 Kv)	20 psi (138 kPa)

Hydraulic characteristics



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