VEZ-41/42/43 Series

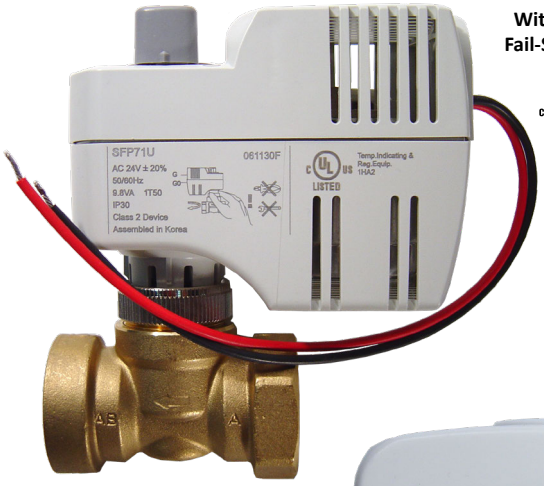
2-Way, NPT, Zone Control Valves (½ to 1")

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Description

These globe zone control valves are designed to regulate the flow of hot or chilled water to such applications as VAV terminal unit reheat coils, fan coil units, and induction units. The compact design of these units allows easy installation within small enclosures.

Valve bodies, available in 1/2 to 1" line sizes, are all normally open. The actuator determines the fail position. Actuators have position indication and manual override. Replacement actuators can be installed on the valve bodies without tools.





Models

Use this chart to select the desired model of valve:

VEZ-4 *X* *YYY* MB *Z*

Actuator

A: 10–0 VDC (closed-open) Proportional (MEP-3516)
B: 0–10 VDC (closed-open) Proportional (MEP-3511)
F: Tri-State, 24 VAC, Floating (MEP-3510)
M: NO, 2-pos., 24 VAC, Spring Return (MEP-3503)
N: NC, 2-pos., 24 VAC, Spring Return (MEP-3501)
P: NO, 2-pos., 120 VAC, Spring Return (MEP-3504)
Q: NC, 2-pos., 120 VAC, Spring Return (MEP-3502)
(NOTE: Actuators "A," "B," and "F" are fail-in-place)

Size/Cv

02A: 1/2"; 1.0 Cv
02B: 1/2"; 2.5 Cv
02C: 1/2"; 4.0 Cv
03A: 3/4"; 4.1 Cv
04A: 1"; 7.0 Cv

Control Type

1: Normally Open (actuator "M" or "P" only)
2: Normally Closed (actuator "N" or "Q" only)
3: Fail in Place (actuator "A," "B," or "F" only)

Features

- Choice of tri-state/floating or proportional fail-in-place or two-position (NO or NC) spring-return fail-safe
- Compact size
- Spring-return fail-safe actuators feature easy manual override, visual position indication, UL listing for plenum installations, and heat-resistant lead wires
- Non-fail-safe actuators feature manual override (with 3 mm hex wrench), visual position indication, and are CE compliant and UL listed

Specifications

Valve Body

Service	Hot or chilled water, up to 50% glycol
Connections	Female NPT
Seat Style	Metal to metal
Valve Body Rating	ANSI Class 125
Max. Inlet Pressure	125 psig (862 kPa)
Max. Close-Off	1/2 to 3/4" = 44 psi (303 kPa); 1" = 22 psi (152 kPa)
Close-Off Ratings	According to ANSI/FCI 70-2
Leakage Rating	ANSI Class III
Flow Characteristics	Linear
Material	
Body	Brass
Body Trim	Brass
Stem	Stainless steel ASTM A582 Type 303
Packing	Ethylene propylene O ring

⚠ CAUTION

Using mineral oil lubricants or other incompatible substances in system fluids may damage EPDM rubber seals in valves. Before using any lubricant or additive in a water or ethylene glycol base, consult the substance manufacturer for compatibility with EPDM (Ethylene Propylene Diene Monomer).

Actuators

All	24 in-lb. (105 N•m) torque
Proportional	24 VAC Power, 50/60 Hz, 2.5 VA, 34 sec. running time, 9 oz. (0.25 kg)
Tri-State	24 VAC, 50/60 Hz, 0.8 VA, 150 sec. running time, 9 oz. (0.25 kg)
2-Position	24 VAC or 120 VAC, 60 Hz, 9.8 VA, 35 sec. running time, 1.18 lb. (0.54 kg)

General

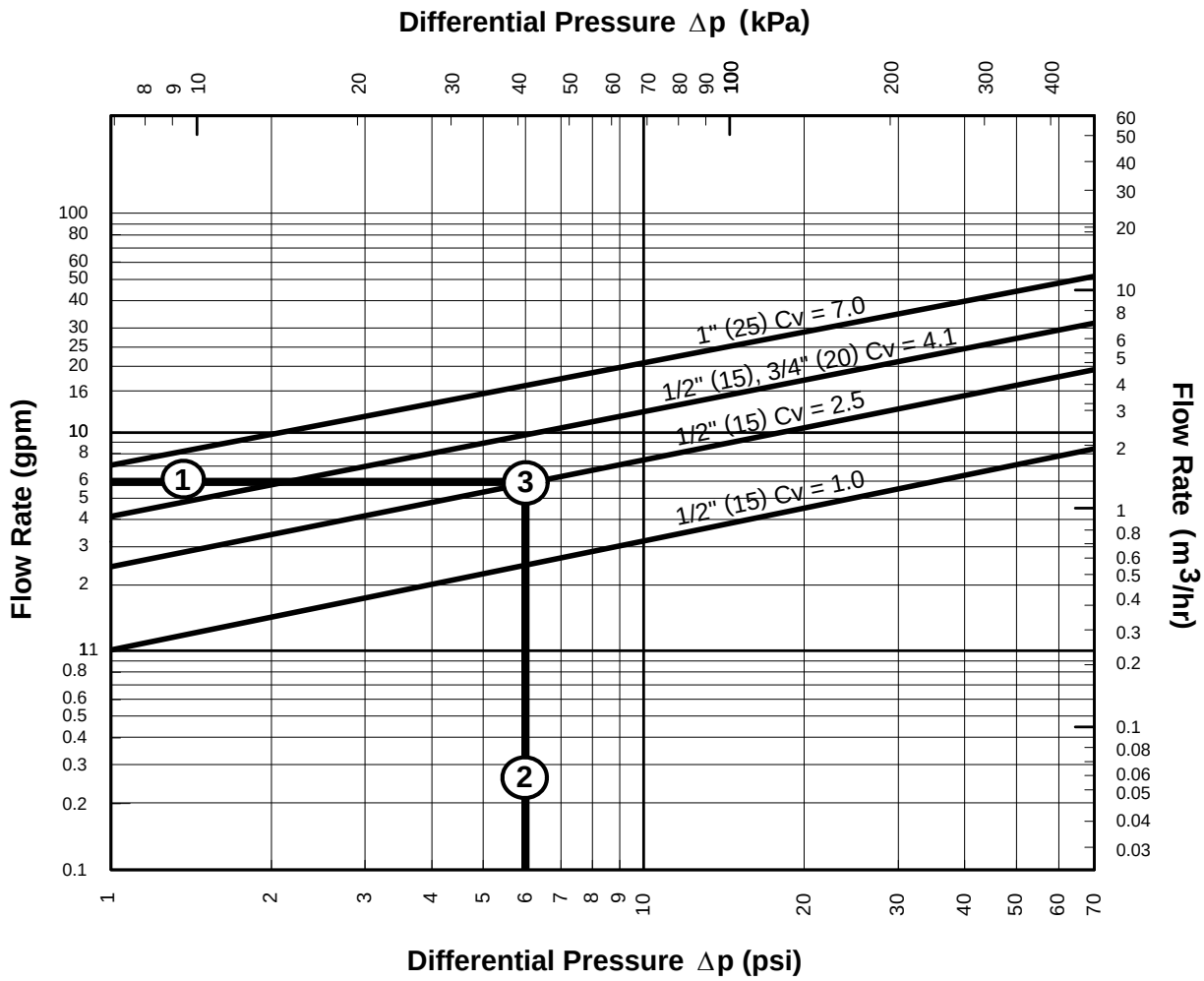
Mounting Location	NEMA 1 (interior only)
Temperature Limits	
Medium	34 to 230° F (1 to 110° C)
Ambient	41 to 122° F (5 to 50° C) @ 0 to 90% RH (non-condensing)
Shipping	–13 to 158° F (–25 to 70° C)
Approvals	UL 873
	cUL certified to Canadian Standard C22.2 No. 24-93
	CE compliant (non-spring return actuators)

Maximum Water Capacity—U.S. Gallons per Minute

Valve Size (inches)	Pressure Differential (psi)																
	Cv/1	2	3	4	5	6	8	10	15	20	25	30	40	50	60	75	psi
0.5	1.0	1.4	1.7	2.0	2.2	2.4	2.8	3.2	3.9	4.4	5.0	5.5	6.3	4.1	7.7	8.7	gpm
0.5	2.5	3.5	4.3	5.0	5.6	6.1	7.1	7.9	9.7	11.2	12.5	13.7	15.8	17.7	19.4	21.7	
0.5/0.75	4.1	5.8	7.1	8.2	9.2	10.0	11.6	13.0	15.9	18.3	20.5	22.5	25.9	29.0	31.8	35.5	
1.00	7.0	9.9	12.1	14.0	15.7	17.1	19.8	22.1	27.1	31.3	35.0	38.3	44.3	49.5	54.2	60.6	

Maximum Water Capacity—Cubic Meters per Hour (m^3/hr)

Valve Size (mm)	Pressure Differential (kPa)														
	1	10	20	30	40	50	60	80	Kvs/100	150	200	300	400	500	kPa
15	0.9	0.27	0.38	0.47	0.54	0.60	0.66	0.76	0.85	1.04	1.20	1.47	1.70	1.90	m^3/hr
15	0.21	0.68	0.96	1.17	1.35	1.51	1.66	1.91	2.15	2.60	3.00	3.70	4.30	4.80	
15/20	0.35	1.12	1.59	1.94	2.24	2.51	2.75	3.17	3.50	4.34	5.01	6.14	7.09	7.93	
25	0.60	1.91	2.71	3.32	3.83	4.28	4.69	5.41	6.00	7.41	8.56	10.48	12.11	13.54	



Select a valve given: ① Required flow = 6 gpm
② Desired pressure drop = 6 psi
③ Choose a 1/2-inch valve, Cv 2.5

Accessories/Repair Parts

NOTE: The last digit of valve model number represents the type of actuator.

Conduit Connector

HPO-5063	For actuators "F/B/A"

Replacement Block Cover and Terminal Plug

HPO-5062	For proportional actuators "A/B"
HPO-5061	For tri-state actuator "F"

Replacement Valve Bodies

VFZ-4102AM	2-way, 1/2", 1.0 Cv
VFZ-4102BM	2-way, 1/2", 2.5 Cv
VFZ-4102CM	2-way, 1/2", 4.0 Cv
VFZ-4103AM	2-way, 3/4", 4.1 Cv
VFZ-4104AM	2-way, 1", 7.0 Cv

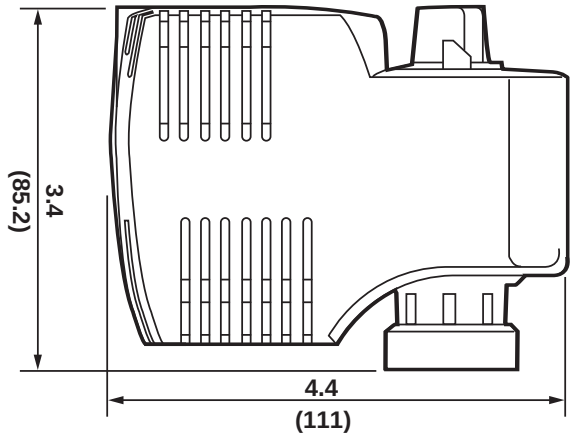
Replacement Actuators

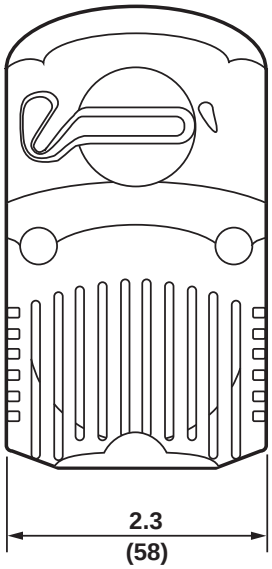
MEP-3501	"N" (NC, 2-position, 24 VAC, spring return)
MEP-3502	"Q" (NC, 2-position, 120 VAC, spring return)
MEP-3503	"M" (NO, 2-position, 24 VAC, spring return)
MEP-3504	"P" (NO, 2-position, 120 VAC, spring return)
MEP-3510	"F" (Tri-State, 24 VAC, floating)
MEP-3511	"B" (0–10 VDC proportional)
MEP-3516	"A" (10–0 VDC proportional)

Dimensions

Dimensions in inches (mm) and weight in pounds (kg)

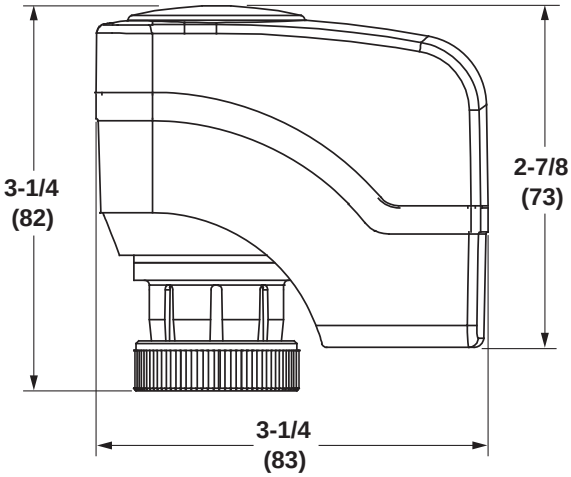
Two-Position Fail-Safe Actuator

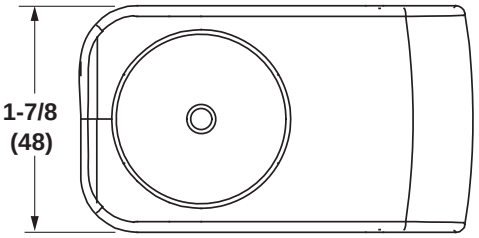




Actuator Weight lb. (kg)
1.18 (0.54)

Tri-State or Proportional Actuator

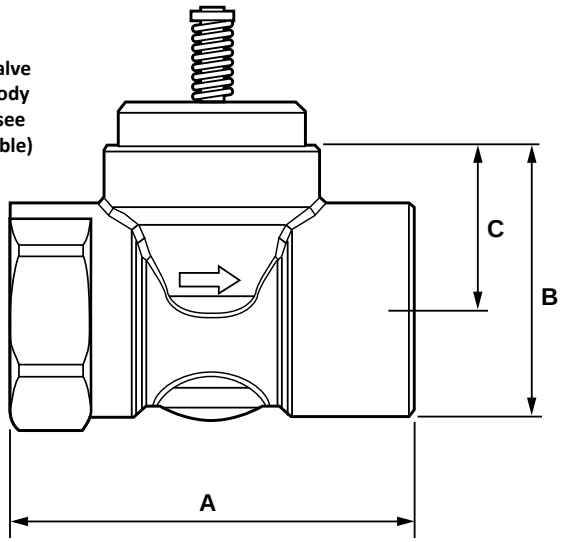




Actuator Weight lb. (kg)
0.56 (0.25)

NOTE: Minimum access space recommended is 8-inches (200 mm) above the actuator and beside the terminal plug.

Valve Body (see table)



Valve Body Size Inches (mm)	A	B	C	Weight lb. (kg)
0.5 (15)	2.76 (70)	1.63 (41.5)	1.00 (25.4)	0.82 (0.37)
0.75 (20)	2.76 (70)	1.77 (45)	1.00 (25.4)	0.99 (0.45)
1.0 (25)	3.50 (89)	2.10 (54)	1.00 (25.4)	1.68 (0.76)

KMC Controls, Inc.
19476 Industrial Drive, New Paris, IN 46553
574.831.5250
www.kmccontrols.com; info@kmccontrols.com

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