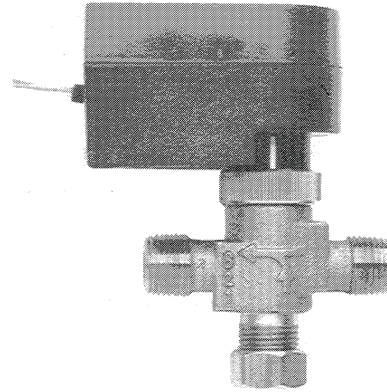


V-42000 Series

Valve Assemblies



APPLICATION

The V-42000 series valve assembly is designed to control water and glycol solutions. The electric actuator requires a 24 Vac supply and receives a floating control signal to control the 7/32 in. (5.5 mm) nominal stroke valve. By removing the cap from the bottom by-pass port (III), this valve assembly is converted to a three-way valve.

ACTUATOR SPECIFICATIONS

- Operating Voltage:** 24 Vac, -20 to +5%.
- Frequency:** 50 to 60 hz, voltage tolerance at 50 hz -20 to +10%.
- Power Consumption:** 1.3 VA.
- Running Time:**
 - At 60 Hz, 125s.
 - At 50 Hz, 150s.
- Nominal Stroke:** 7/32 in. (5.5 mm).
- Ambient Temperature:**
 - Operating, 32 to 122 °F (0 to 50 °C).
 - Shipping and Storage, -13 to 149 °F (-25 to 65 °C).
- Weight:** See Figure-5.

VALVE BODY SPECIFICATIONS

- Body Style:** Globe screwed.
- Line Size/Capacity:** See Tables-1 and 2.
- Medium:** Water, glycol to 50%.
- Body:** Bronze.
- Trim:** Stainless steel.
- Body Rating:** Class 125 (PN 16).
- Packing:** Double O-ring.
- Rangeability:**
 - 1/2 in. 50:1.
 - 3/4 in. 100:1.
- Flow Characteristics:** Equal percentage (II to I) Linear (III to I).
- Leakage Rate:** 0.02% of Cv.
- Maximum Medium Temperature:** 41 to 230 °F (5 to 110 °C).
- Maximum Operating Pressure:** 232 psig (1600kPa).
- Maximum Pressure for Modulating Service:** 58 psig (400 kPa).
- Close-off Pressure:** See Table-1.
- Weight:** See Figure-5.
- Dimensions:** See Figure-5.

Table-1 Specifications.

Valve Assembly	Nominal Valve Size in. (mm)	Cv (Kvs)	Close-off psig (kPa)	Maximum ΔP ^a psig (kpa)	External Thread on Valve Body
V-42102	1/2 (15)	0.47 (0.4)	58 (400)	58 (400)	1/2" NPT
V-42112	1/2 (15)	0.74 (0.63)	58 (400)	58 (400)	1/2" NPT
V-42122	1/2 (15)	1.17 (1)	58 (400)	58 (400)	1/2" NPT
V-42132	3/4 (20)	1.87 (1.6)	58 (400)	58 (400)	3/4" NPT
V-42142	3/4 (20)	2.92 (2.5)	58 (400)	58 (400)	3/4" NPT

^a Maximum ΔP = maximum recommended differential pressure for modulating service.

Table-2 Maximum Water Capacity - U.S. Gallons Per Minute

Valve Assembly	Pressure Differential psi											
	CV1	2	4	6	8	10	15	20	25	30	40	50
V-42102	0.47	0.66	0.94	1.15	1.33	1.49	1.82	2.10	2.35	2.57	2.97	3.32
V-42112	0.74	1.05	1.48	1.81	2.09	2.34	2.87	3.31	3.70	4.05	4.68	5.23
V-42122	1.17	1.65	2.34	2.87	3.31	3.70	4.53	5.23	5.85	6.41	7.40	8.27
V-42132	1.87	2.64	3.74	4.58	5.29	5.91	7.24	8.36	9.35	10.24	11.83	13.22
V-42142	2.93	4.14	5.86	7.18	8.29	9.27	11.35	13.10	14.65	16.05	18.53	20.72

OPERATION

A 24 Vac control signal to the Y1 control input opens the valve.
 A 24 Vac control signal to Y2 control input closes the valve.
 With no control voltage, the actuator and valve maintain position.

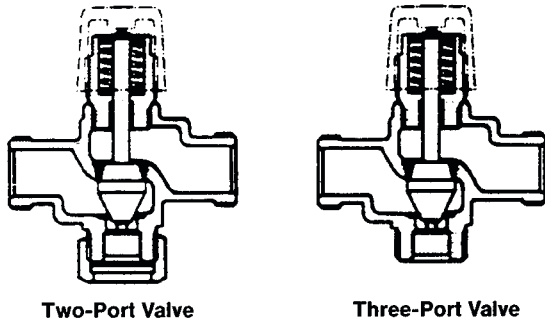


Figure-1 Valve Construction.

INSTALLATION

Valve assembly should be mounted in the return.
 Match the direction of flow with the symbol cast on the valve body.
 Minimum clearance above the actuator is 4 in. (100 mm).
 Valve and actuator come with mounting instructions.
 The assembly can be mounted in any position except with the actuator beneath the valve.

Caution: Clean or filter piping system so that it is free of dirt and foreign particles before commissioning valves.

WIRING

Warning: On valve actuator wiring code, "G" is HOT, not ground.

APPLICATIONS

Two-Port Valves

Arrow on valve indicates the direction of flow. Direction of flow is always from II (A) to I (AB).

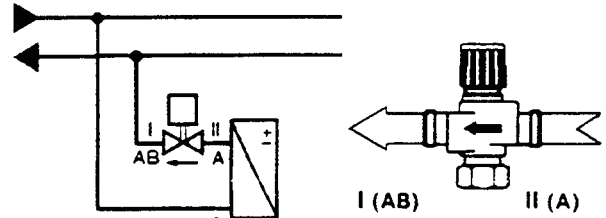


Figure-2 Direction of Flow with Two-Port Valve.

Three-Port Valves

These valves must always be used as mixing valves. Arrow on valve indicates the direction of flow. Direction of flow is from II (A) and III (B) to I (AB).

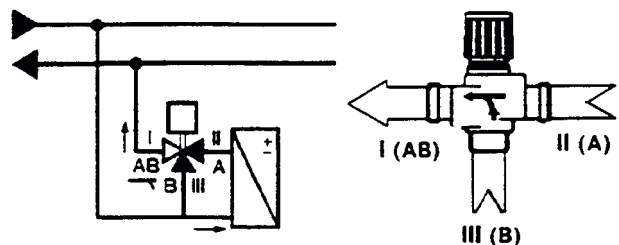


Figure-3 Direction of Flow with Three-Port Valve.

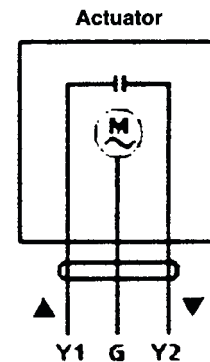
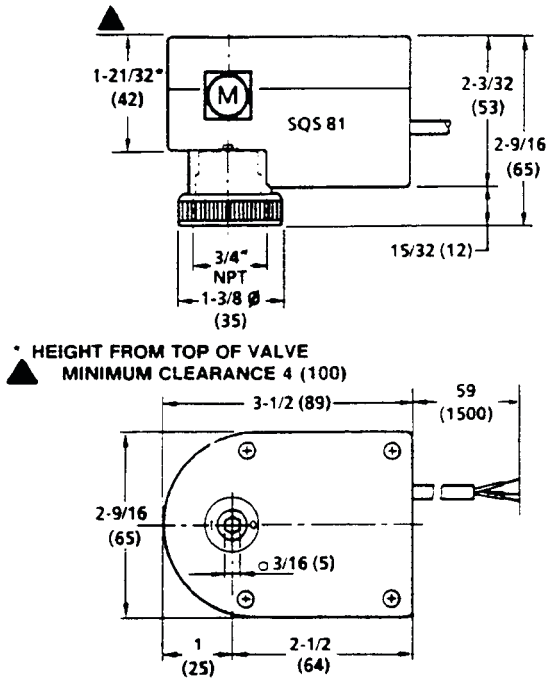


Figure-4 Wiring Diagram.

Table-3 Wiring Cables.

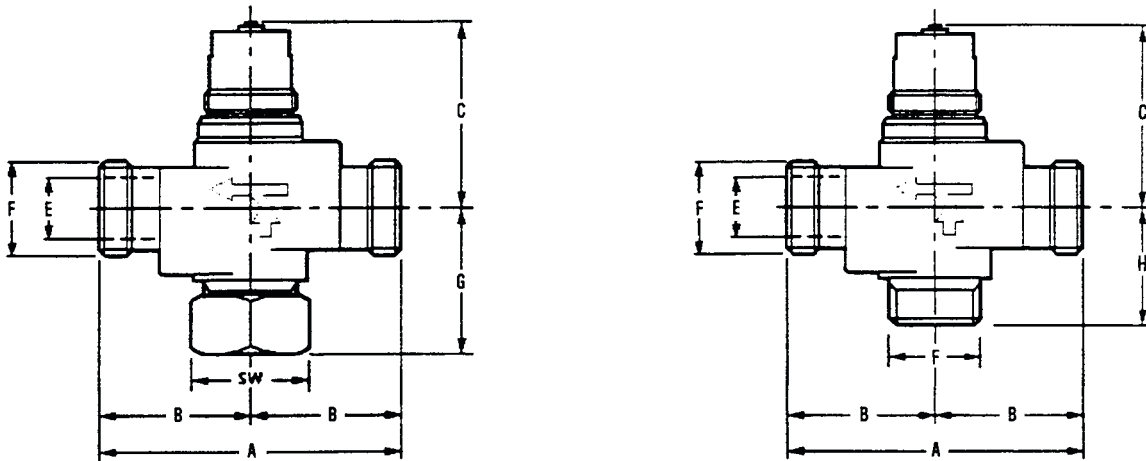
Actuator Designation	Position	Wire Color
Y1	Open	Black
Y2	Close	Red
G	Common	White (Clear)



VALVE ASSEMBLY HEIGHT

Valve Size in. (mm)	2-Way in. (mm)	3-Way in. (mm)
1/2 (15)	5-3/16 (131)	4-15/16 (124)
3/4 (20)	5-9/16 (141)	5-5/16 (134)

**DIMENSIONS IN INCHES
MILLIMETERS IN PARENTHESES**



Valve	Cv	A	B	C	E	F	G	SW	H	Weight of Assembly lb. (kg)
V-42102	0.47	3-5/16 (84)	1-11/16 (42)	1-7/8 (47)	7/16 (11.5)	1/2" NPT	1-11/16 (42)	15/16 (24)	1-3/8 (35)	1.4 (0.64)
V-42112	0.74	3-5/16 (84)	1-11/16 (42)	1-7/8 (47)	7/16 (11.5)	1/2" NPT	1-11/16 (42)	15/16 (24)	1-3/8 (35)	1.4 (0.64)
V-42122	1.17	3-5/16 (84)	1-11/16 (42)	1-7/8 (47)	7/16 (11.5)	1/2" NPT	1-11/16 (42)	15/16 (24)	1-3/8 (35)	1.4 (0.64)
V-42132	1.87	4 (101)	2 (50.5)	2 (51)	11/16 (17)	3/4" NPT	1-7/8 (48)	1-3/16 (30)	1-5/8 (41)	2.55 (1.16)
V-42142	2.92	4 (101)	2 (50.5)	2 (51)	11/16 (17)	3/4" NPT	1-7/8 (48)	1-3/16 (30)	1-5/8 (41)	2.55 (1.16)

Figure-5 Dimensions.

