

V48A & V88A,J Diaphragm Gas Valves

SPECIFICATION DATA



FEATURES

- Line voltage, 2-wire thermostat or controller used with a V48; V88 used with 24V thermostat.
- Valves provide slow opening and fast closing.
- Two second maximum closing time.
- V88J rated for 150°F (66°C) ambient temperature.
- V48A and V88A rated for either 1/2 or 1 psi (3.4 or 6.9 kPa), depending on model. V88J rated for 1 psi (6.9 kPa).
- One model for natural and LP gases.
- Wide range of sizes and capacities.
- Firm closing; diaphragm is both weight and spring loaded.
- Valve closes on power failure; recommended for final shutoff service.
- Adjustable or fixed bleed orifices available for installation by OEM.
- Valve position indicator on 1-1/4 in. V48A2227.

APPLICATION

The V48 and V88 are solenoid-operated diaphragm valves suitable for LP (Liquefied Petroleum), natural, and manufactured gases. They are normally used on atmospheric boilers, commercial water heaters, and rooftop heaters.

SPECIFICATIONS

Models:

V48A (120 Vac) or V88A (24 Vac) solenoid operated diaphragm valves for 1/2 or 1 psi (3.4 or 6.9 kPa) maximum operating pressure.

V88J (24 Vac) solenoid operated diaphragm valves for 1 psi (6.9 kPa) operating pressure and 150°F (66°C) maximum ambient temperature.

Type of Gas: Suitable for liquefied petroleum (LP), natural, manufactured, and sulfur-bearing gases.

Valve Capacity: See table in Fig. 2.

Valve Pattern: Straight-through, non-offset.

Valve Body Material: Die-cast aluminum.

Pilot Tapping:

3/4 through 1-1/2 inch valves: 1/8-27 NPT.
2 through 3 inch valves: 1/4-18 NPT.

Bleed Tapping: 1/8-27 NPT.

Valve Opening Time:

Five seconds maximum at 2 oz/in.² (0.86 kPa) pressure. Adjustable bleed valve assembly or fixed bleed orifices available for longer opening time (NPT threads only; see Accessories).

Valve Closing Time (on power failure; measured at 2 oz/in.² (0.86 kPa) pressure): 2 seconds maximum.

Maximum Operating Pressure: See Table 2.

Power Consumption (maximum): 9 watts or 15 VA.

Ambient Temperature Rating:

V48A and V88A: 32°F to 125°F (0°C to 52°C).
V88J: 32°F to 150°F (0°C to 66°C).

Maximum Fluid Temperature:

V48A, V88A: 125°F (52°C).
V88J: 150°F (66°C).

Thermostat Heat Anticipator Setting: For 60 Hz V88, set at 0.6A; for 50Hz set at 0.65A.

Dimensions: See Fig. 1.

Weight: See Table 1.

Table 1. Valve Weight.

Pipe Size (in.)	lb	kg
3/4	2-1/2	1.13
1	3	1.36
1-1/4	3-1/2	1.59
1-1/2	4	1.81
2	9	4.08
2-1/2	8-1/2	3.86
3	9-1/2	4.31

Approvals: (60 Hz models only):

Underwriters Laboratories Inc. Listed: File No. MH64447; Guide No. YIOZ.
CSA 158158-2500005576 (Z21.21-CSA C I 6.5).

NOTE: All models rated at 50 Hz and all models with BSP:PI threads are not CSA Design Certified.

Optional Feature: Valve position indicator is available on 1-1/4 inch V48A2227.

Replacement Coil Assemblies:^a

116930: 24V, 60 Hz V88A
116931: 120V, 60 Hz V48A.
116932: 220V, 50 Hz V48A
116932: 240V, 60 Hz V48A
118888: 24V, 60 Hz V88J

^a These V48/V88 bonnet assemblies and solenoid operators are not compatible with old style valve bodies.

Table 2. Models Available.

Model	Voltage and Frequency	Maximum Operating Pressure		Pipe Size (in.)	Thread Type ^a
		psi	kPa		
V48A	120V, 60 Hz	1/2	3.4	3/4, 1, 1-1/4, 1-1/2	NPT
		1	6.9	1, 1-1/4, 1-1/2, 2, 2-1/2, 3	
V88A	24V, 60 Hz	1/2	3.4	3/4, 1, 1-1/4, 1-1/2	NPT
		1	6.9	3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3	
V88J	24V, 60 Hz		6.9	1, 1-1/4	

^a NPT—American Standard Taper Pipe Threads.

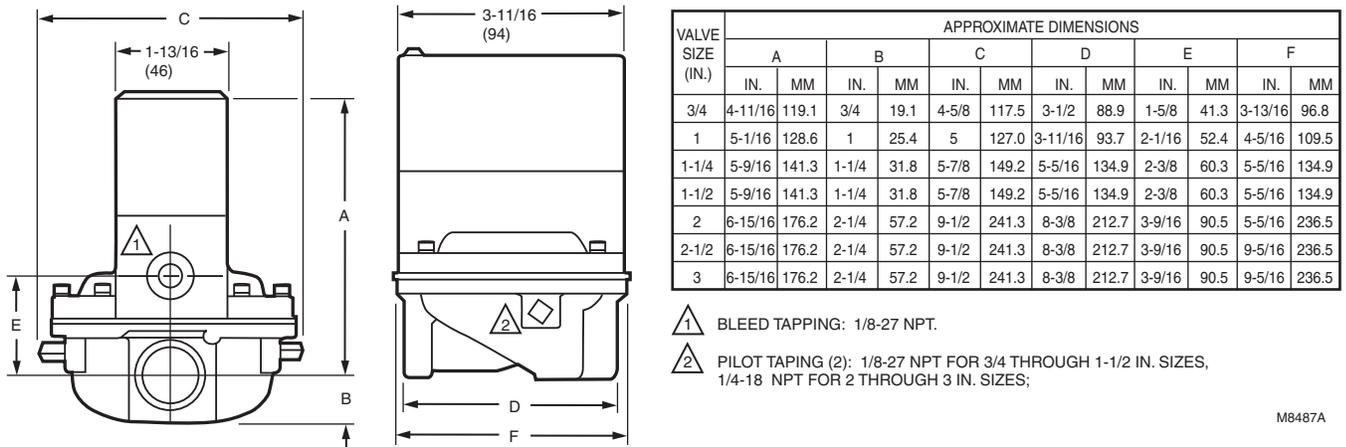


Fig. 1. Mounting dimensions of V48A and V88A,J Diaphragm Gas Valves in in. (mm).

Table 3. Extending Valve Opening Time^a By Adding a Bleed Orifice.

Valve Size (in.)	Valve Opening Time (seconds)		
	No Orifice	Orifice No. 122160, 0.018 in. (0.46 mm)	Orifice No. 124674, 0.011 in. (0.28 mm)
1	1	2	3
1-1/4	1	5	6
1-1/2	1	5	6
2	4	15	32
2-1/2	4	23	37
3	5	24	37

^a Time to reach 80% gas flow at fully open position. Inlet pressure; 4.2 in. wc (1.05 kPa) for 1 to 2 in. valves; 5 in. wc (1.25 kPa) for 2-1/2 and 3 in. valves. Pressure drop across valves at fully open position. 0.2 in. wc (0.05 kPa) for 1 to 2 in. valves; 1 in. wc (0.25 kPa) for 2-1/2 and 3 in. valves.

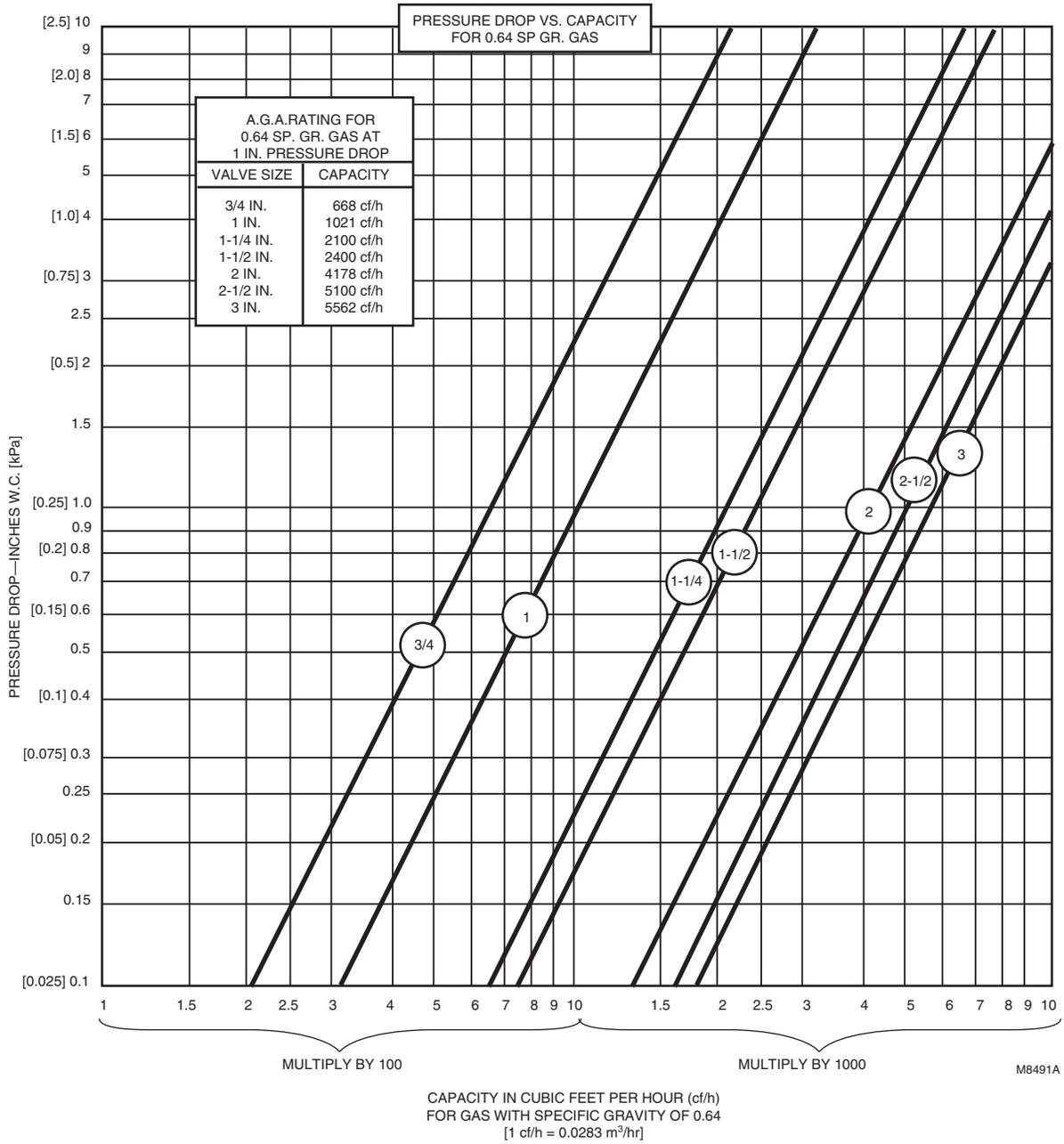


Fig. 2. Pressure drop vs. capacity chart for sizing gas valves.