

iPolymer | Miniature Solenoid Valves

Miniature Solenoid Valves

These valves offer precision performance under extreme conditions. Their virgin PTFE wetted surface designs provide unsurpassed chemical compatibility with a variety of flow media. Offered in 2-way and 3-way options with a PTFE hard seat or FKM (Viton eq.) O-ring, these valves are suitable for a variety of ultra-clean and highly corrosive media for semiconductor, pharmaceutical, biomedical and chemical process applications. The PTFE body, valve stem and one-piece diaphragm maintain a material inert boundary for ultra-clean applications.

Highlights

- PTFE design for ultra-clean and chemical compatibility
- Configurations available for various DC & AC voltages
- Continuous duty cycle rated at controlled ambient temperatures and reduced pressures
- Valve seat and diaphragm designed for positive flushing and bubble-tight shut off
- Non porous diaphragm configured to completely isolate solenoid coil from media
- 100% coil driven, which does not require energizing pressure or vacuum to operate
- O-ring seat configurations for vacuum and complex media applications
- Designed for aggressive media and elevated temperature

Recommendations

- Solenoid Valves are designed for Continuous Duty Cycles of 50% or less and for Energized Dwell Periods of no longer than 90 minutes.*
- For many applications, the Duty Cycle or Energized Dwell Period can be increased. Due to heat generation, without Power Management Circuit, it is not recommended to run with an accumulated Energized Dwell Period greater than 160 minutes per 8 hour production shift.*
- The Solenoid Coil on our valve generates heat when energized. Temperatures above 150°F will shorten coil life. Temperatures above 172°F are not recommended. Power Management Circuit will knock down the steady state temperature of a functioning coil.*
- Contact us for unique Solenoid Valve applications. Because of the heat generation, care must be taken to consider the ambient conditions and air flow around the coil of any solenoid valve application.*



Specifications

General Valve Parameters	
1/8 Orifice Cv (2W-NC, 2W-NO, 3W)	0.35 / 0.18 / 0.18
1/4 Orifice Cv (2W-NC, 2W-NO, 3W)	0.60 / 0.35 / 0.35
3/8 Orifice Cv (2W-NC, 2W-NO, 3W)	0.90 / 0.60 / 0.60
Common Port Vacuum in-Hg (max gauge)*	25 2-Way / 23 3-Way
Typical Response Time (msec)	20 - 30
Media Temperature (range)	0 - 80°C / 32 - 176°F
Ambient Temperature (range)	0 - 50°C / 32 - 122°F
Wattage Range (std)	11 - 13 W
Voltage Tolerance	-2% + 10%
Coil Lead Length (3 Wire) (Red is Hot / White is Neutral / Green is Ground)	24" - 22 gauge

Maximum Port Pressure Rating (psi)*	O-Ring Seat 3-Way	PTFE Seat 3-Way
Common Port	60	60
Normally Closed Port	35	30
Normally Open Port	60	60
	2-Way NC	2-Way NC
Inlet Port	60	60
Outlet Port	35	30
	2-Way NO	2-Way NO
Inlet Port	60	60
Outlet Port	60	60

*Referenced values based on opposing ports open to atmosphere. Vacuum Rating assumes O-Ring Seal and opposing ports open to atmosphere. Pressures listed are for solenoid valve operating at room temperature with coil temperatures elevated to a maximum of 120°F. Elevated coils temperature above 120°F result in reduce performance. Consult factory for performance under extreme conditions.

Ordering Format

M 66 2C 1A F S - H T - 123

0 1 2 3 4 5 6 7 8

0. Valve Series

M = Miniature Solenoid Valves

1. Ports / Max. Orifice

22 = 1/8" FNPT, 1/8" Orifice

44 = 1/4" FNPT, 1/4" Orifice

66 = 3/8" FNPT, 3/8" Orifice

42 = 1/4" Flare, 1/8" Orifice

2. Valve Configuration

2C = 2-Way Normally Closed

3W = 3 Way (See Port Arrangements)

3. Coil Voltage

1A = 115 VAC

2D = 24 VDC

4. Port Selection

F = Female NPT

FF = Flare

5. Body Shape

S = Square

6. Coil Wattage

H = Standard Coil

7. Valve Seat

V = FKM (Viton eq.)

T = PTFE Hard Seat

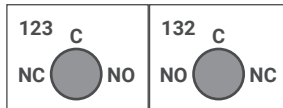
5. Port Arrangement

(Only for 3-way config.)

123 = NC-C-NO

132 = NO-C-NC

Top View of Coil



*Optional flyback diode available for use with sensitive controls. Contact us for custom configurations and vacuum applications.

Auxiliary Plate ("AP")

For highly corrosive or caustic gas applications, such as chlorine gas, our Auxiliary Plate option gives an extra line of protection. The valve has an auxiliary plate between the upper diaphragm and solenoid coil. The AP is O-ring sealed on the stem of the diaphragm and supported at the outer body-to-coil interface.



3/8" 3-Way FNPT

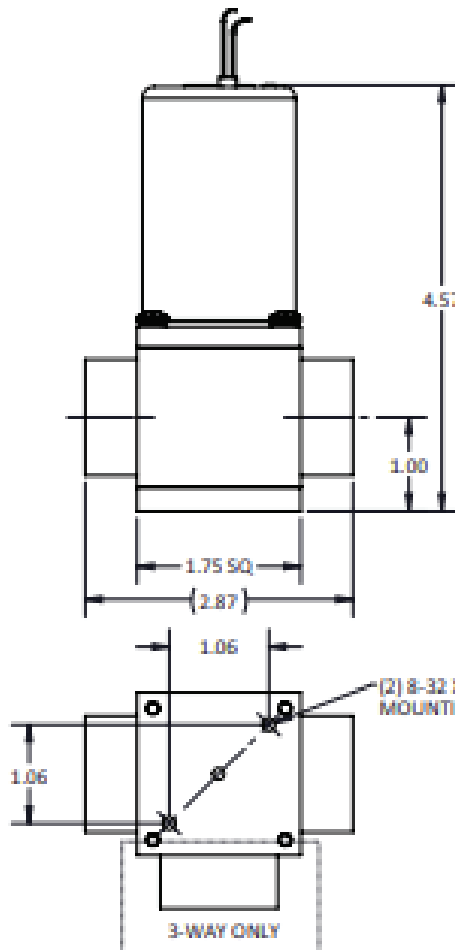


1/8" 2-Way FNPT

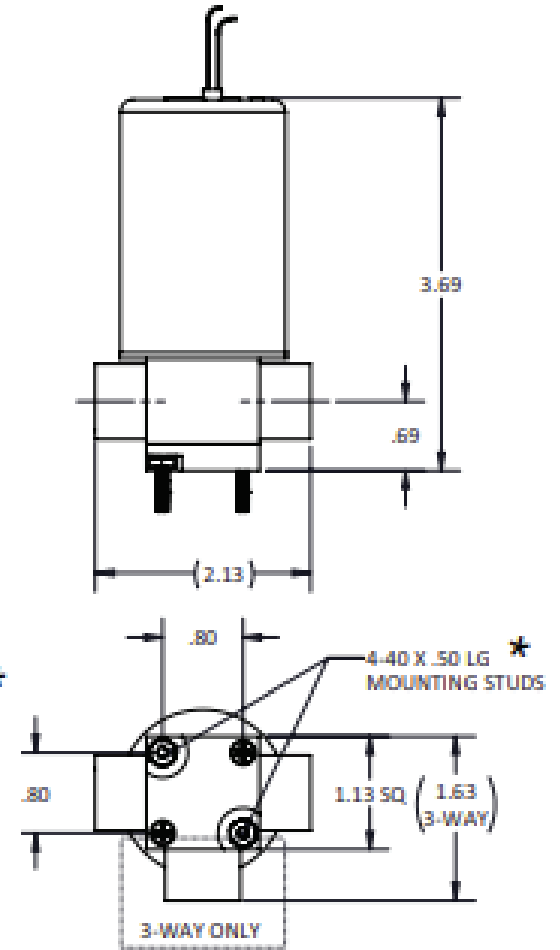


Dimensions

Typical Dimensions
for 3/8" and 1/2" Models



Typical Dimensions
for 1/8" and 1/4" Models



*Two Mounting Studs are supplied. Contact us for alternate mounting options. Limit applied torque on mounting studs to 7 - 9 in-lbs max.