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iPolymer Miniature Solenoid Valves



Our **iPolymer Miniature Solenoid Valves** offer precision performance under extreme conditions. Offered as 2-Way and 3-Way Valves with four internal body configurations and five seat sealing methods, our iPolymer Miniature Solenoid Valves are suitable for a wide range of ultra clean to highly corrosive media applications.

Our all virgin PTFE wetted surface design is ideally suited for semiconductor, pharmaceutical, bio-medical and chemical process applications. Configurable with a PTFE Hard Seat, FKM (Viton Eq.) O-Ring Seat, FFKM (Kalrez Eq.) O-Ring Seat, EPDM O-Ring Seat, or Aflas O-Ring Seat the iPolymer Miniature Series Solenoid Valve line provides unsurpassed chemical compatibility with a wide range of flow media. The all wetted PTFE body, valve stem and one piece diaphragm maintain a material inert boundary for ultra clean applications.

- Catalog standard iPolymer 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 our iPolymer 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 will generate heat when energized. Temperatures above 150ºF will shorten coil life. Temperatures above 172ºF are not recommended. Our iPolymer Power Management Circuit will knock down the steady state temperature of a functioning coil.*
- Call our iPolymer factory with your unique Solenoid Valve application. 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.*

HIGHLIGHTS:

- PTFE design optimized 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 – 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.

BECO manufacturing TEQCOM

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 - 80ºC / 32 - 176ºF
Ambient Temperature (range)	0 - 50ºC / 32 - 122ºF
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

RoHS Compliant

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

Conduit Connector Coil available. *Call Customer Service.*



**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 120ºF. Elevated coils temperature above 120ºF result in reduce performance. Consult factory for performance under extreme conditions.*

Other Options Available on Request:

- Valves with special port connections such as combinations of pipe, tube and flared ends.
- Extra long wire leads (36" or 48").
- Valves without mounting studs or valves with 4 mounting studs (2 are standard).
- Manifolded valve assemblies.
- Low Power Coils and Power Management options are available. Consult factory for further details and de-rated pressure values.



Solenoid Valves: ORDERING FORMAT

M 6 6 2C 1A F S – H T – 123

Valve Series

See Porting chart below

Valve Configuration
2C = 2 Way Normally Closed
2O = 2 Way Normally Open
3W = 3 Way (See Port Arrangements)

Coil Voltage
1A = 115 VAC 1D = 12 VDC
2A = 230 VAC 2D = 24 VDC
3A = 24 VAC

See Below 3-Way Valve Only

Valve Seat
E = EPDM
A = Aflas
V = FKM (Viton Eq.)
K = FFKM (Kalrez Eq.)
T = PTFE (Hard Seat)

Coil Wattage
H = Standard Coil
L = Low Watt
(24 VDC Option - Consult Factory)

Body Shape
S = Square

Port Selection
F = Female NPT
T = Tube Compression
FF = Flare Connection

Consult Factory For Custom Configurations and Vacuum Applications.

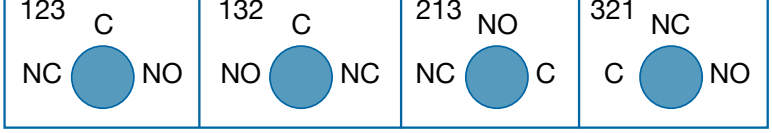
Porting w/ Max Orifice

PIPE	
22	1/8” FNPT & 0.125” Orifice
44	1/4” FNPT & 0.250” Orifice
66	3/8” FNPT & 0.375” Orifice
86	1/2” FNPT & 0.375” Orifice
TUBE	
21	1/8” TUBE & 0.063” Orifice
43	1/4” TUBE & 0.188” Orifice
65	3/8” TUBE & 0.313” Orifice
86	1/2” TUBE & 0.375” Orifice
FLARE	
42	1/4” FLARE & 0.125” Orifice
64	3/8” FLARE & 0.250” Orifice
86	1/2” FLARE & 0.375” Orifice

Port Arrangements

The port orientation can be arranged in four possible patterns on our 3-Way Solenoid Valves. Please select one of the four arrangements.

Looking Down at the Top of the Coil



NC-C-NO	NO-C-NC	NC-NO-C	C-NC-NO

STD = 123 & 132 are our standard port arrangements.

*For use with sensitive controls equipment, optional flyback diode available upon request. Call factory for more information.

Auxiliary Plate (“AP”): For highly corrosive or caustic gas applications, such as Chlorine Gas, our Auxiliary Plate Option (“-AP”) give an extra line of protection. The valve is configured with an auxiliary plate between the upper diaphragm and solenoid coil. The AP (Auxiliary Plate) is O-Ring sealed on the Stem of the diaphragm and supported at the outer body-to-coil interface.

Miniature Solenoid Valve

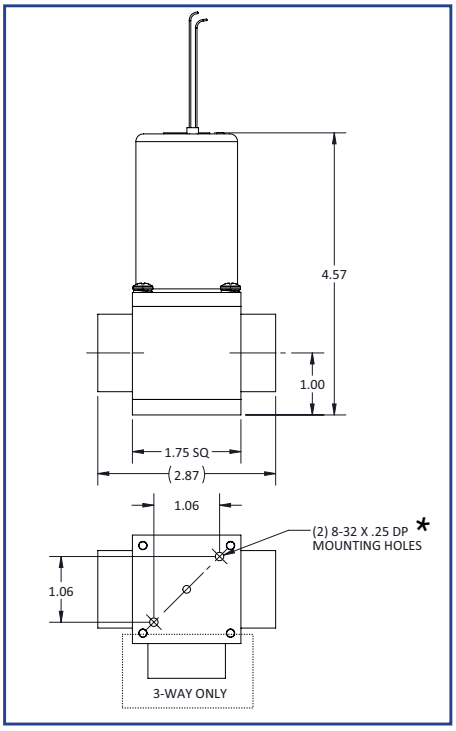
3/8” 3-Way FNPT



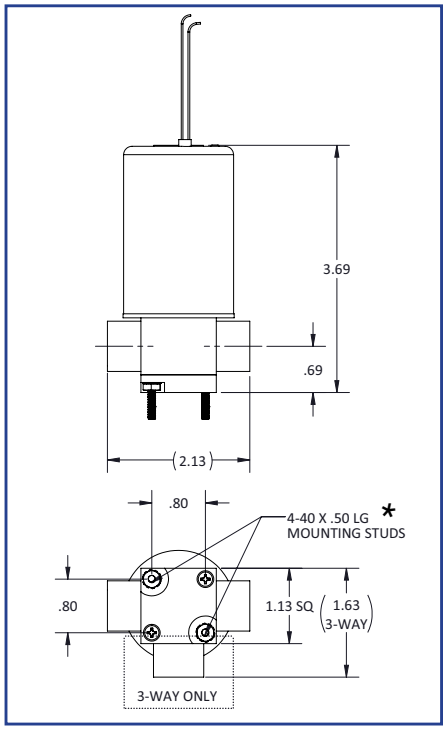
1/8” 2-Way FNPT



Typical for 3/8” and 1/2” Models



Typical for 1/8” and 1/4” Models



** Two Mounting Studs are supplied (standard). Call factory for alternate mounting options.*
Care must be taken to limit the applied torque on the Mounting Studs: 7 - 9 in-lbs max

iPolymer Product Notes:

1. Please email Customer Service at info@ipolymer.com
2. Call us for special applications. We can manufacture our Valves with special mounting and interface dimensions.
3. Upon request, alternate material selection from those listed will allow for expanding temperature ratings or other performance characteristics.
4. Unauthorized disassembly of this product will void the original factory one-year product warranty. For further details please contact your local Distributor or our factory directly.

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