

# M Series – Subminiature

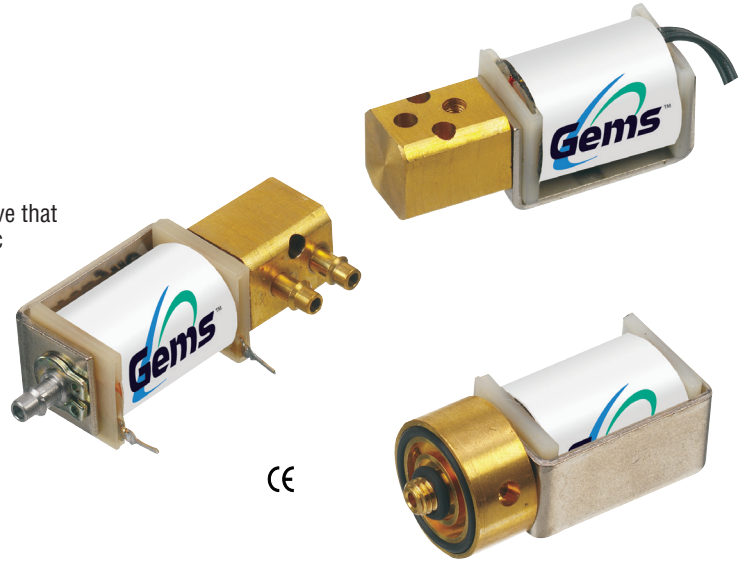
- ▶ MOPD: 100 PSI (6.9 Bar)
- ▶  $C_v$  Range: 0.018 to 0.070 ( $K_v$  Range: 0.017 to 0.032)
- ▶ As Low As 0.5 Watts

The M Series implements efficient power conservation in a solenoid valve that is specifically designed for sub-miniature two- and three-way pneumatic and select liquid applications. Field proven to exceed performance requirements in battery-powered applications, the M Series can be designed for extreme low wattage conditions. With a compact size, consistent high-speed response time, and reliable operation over 200 million cycles, the M Series delivers extended performance and precision flow control in a small lightweight environment.

## Typical Applications

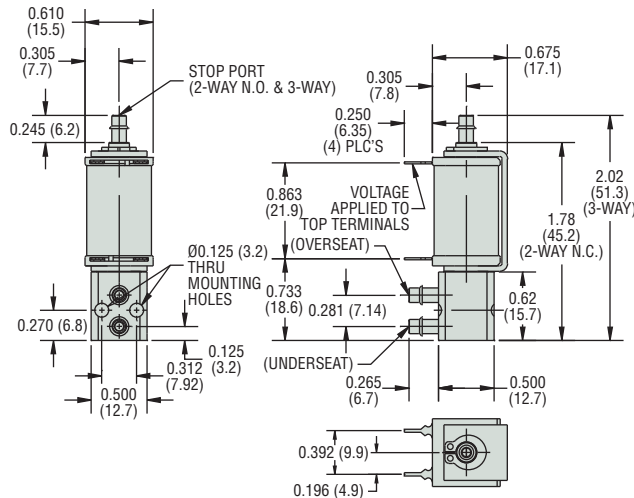
Ideal for inline PC interfacing and manifold assemblies:

- Medical and Therapeutic Healthcare
- Clinical Chemistry and Analysis Equipment
- Drop-on-Demand Printing
- Environmental Instrumentation

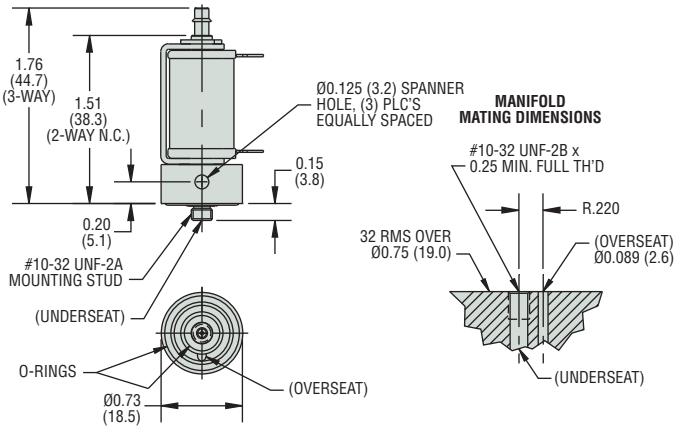


## Dimensions

### Threaded Port Body

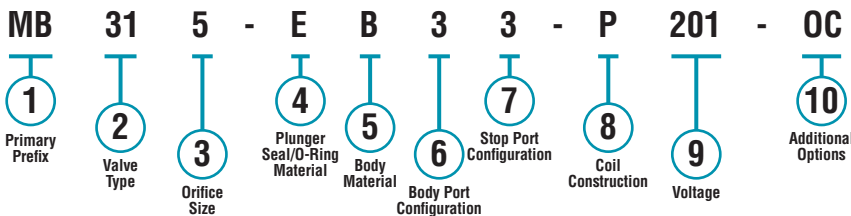


### Manifold Mount Body



## How To Order

Use the **Bold** characters from the choices listed on the following page to construct a product code.



Note: After the Primary Prefix, any '-Code' may be blank when standard (blank) selections are specified.

### Example:

MB315-EB33-P-201

1 Watt 3-Way N.C. solenoid valve with a 0.052" (1.321mm) orifice, EPDM plunger seal/o-ring, brass body, 1/8" barb body and stop port, P.C. board mount (4-pin), operating at 5 VDC, and is cleaned for oxygen use.

Part Prefix Table ①

Power Rating	Orifice		MOPD		C <sub>v</sub>	K <sub>v</sub>	① Primary Prefix
	inches	mm	psi	bar			
0.5 Watt	0.031	0.787	25	1.7	0.018	0.015	MA
	0.052	1.321	10	0.7	0.037	0.032	MA
1 Watt	0.031	0.787	50	3.4	0.018	0.015	MB
	0.052	1.321	25	1.7	0.037	0.032	MB
2 Watts	0.031	0.787	100	6.9	0.018	0.015	MC
	0.052	1.321	50	3.4	0.037	0.032	MC

② Valve Type

- 20 = 2-Way normally closed
- 22 = 2-Way normally open
- 30 = 3-Way normally closed (free vent)
- 31 = 3-Way normally closed (line connection)
- 32 = 3-Way normally open
- 33 = 3-Way multi-purpose
- 34 = 3-Way directional control

③ Orifice Size

- 2 = 0.031" (0.79mm)
- 5 = 0.052" (1.32mm)

④ Plunger Seal / O-Ring Material

- V = Viton®
- N = Nitrile
- E = EPDM

⑤ Body Material

- B = Brass
- A = Aluminum

⑥ Body Port Configuration<sup>1</sup>

- 0 = Face mount
- 1 = 1/16" (1.6mm) barb
- 2 = 5/64" (2.0mm) or 3/32" (2.4mm) barb
- 3 = 1/8" (3.2mm) barb
- 4 = Manifold mount, #10-32 UNF-2A stud<sup>†</sup>
- 5 = #10-32 UNF-2B female thread (180° apart only)
- 6 = 1/8"-27 NPT ports (180° apart only)

⑦ Stop Port Configuration<sup>1</sup>

- 0 = No barb (Standard for 2-way NC & 3-way free vent)<sup>2,3</sup>
- 1 = 1/16" (1.6mm) barb (.031" orifice only)
- 2 = 5/64" (2.0mm) or 3/32" (2.4mm) barb
- 3 = 1/8" (3.2mm) barb

⑧ Coil Construction (Tape-Wrapped, 130°C Class B)

- U = P.C. board solderable (2-pin)
- P = P.C. board mount (4-pin)<sup>4</sup>
- Q = Quick connect 0.110" (2.79mm) spade
- L = Lead-wires, #26 AWG, 18" (45.7cm) long
- W\_\_ = Lead-wires (Specify length in inches)

⑨ Voltage

- 200 = 3 VDC
- 201 = 5 VDC
- 203 = 12 VDC
- 204 = 24 VDC
- \_\_VDC = DC (specify voltage)
- \_\_VAC = AC Rectified 2-watt coil only (specify voltage, lead-wires only)

⑩ Additional Options

- OC = Cleaned for oxygen use
- VAC = Vacuum application - 0 to 27" Hg (0 to 914 mBar)

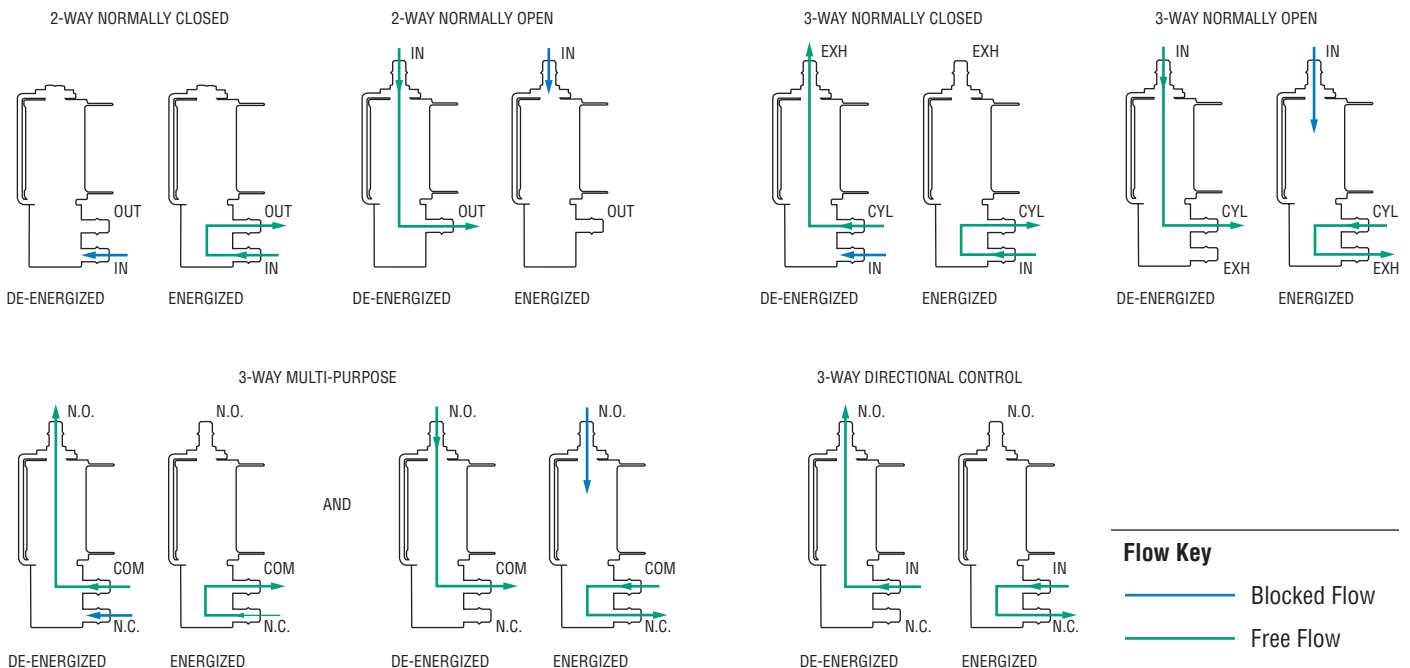
Notes

1. Barbs are brass.
2. For Stop Port Configuration, must select "0" for valve type 20 (2-way NC) and for type 30 (3-way NC Free Vent).
3. For Stop Port Configuration, must select "1" or "2" or "3" for valve types 22 (2-way NO), 31 (3-way NC Line Connect), 32 (3-way NO), 33 (3-way MP), and 34 (3-way DC). Selection "0" can not be used.
4. 2 pins near stop are active.

<sup>†</sup> Teflon® o-ring not suitable for manifold mount.

Gems specializes in the design and manufacturing of custom solenoid valves and fluidic systems. If you don't see what you're looking for, or have a question, contact us at 800-378-1600 or [info@gemssensors.com](mailto:info@gemssensors.com).

Flow Schematic



SOLENOID VALVES