

Manifold mounted solenoid valves for gradient, mixing and diverting applications

- Precise flow characteristics
- Compact, robust construction
- Minimal dead volume
- Fast response time
- All PTFE wetted parts; other materials available

Compact valve / manifold configurations

The Bio-Chem Valve flow selection valves are available with three valve sizes, using 0.38 inch, 0.75 inch and 1.00 inch solenoid shell diameters. These sizes correspond to orifice diameters spanning from 0.032 inches to 0.125 inches, covering a broad range of application requirements. For ease of installation, all inlet ports are positioned on the same side of the manifold. The common outlet port is centered between the inlet ports. (Note: in diverting applications, the inlet and outlet ports are reversed.) The compact manifold construction ensures minimal internal volumes.

Optimized flow characteristics

Every solenoid actuator on the flow selection valve is individually adjusted in the factory so as to provide equal flow rates at the same pressure. Ultra-fast response times for gradient applications. Through rapid cycling of the solenoid, the valves can be used to provide modulating flow rates at constant pressures. With opening and closing times of only 2 milliseconds, the 040T valve series is ideally suited to gradient applications.

Choice of inert wetted materials

The isolation valve design used with the Bio-Chem Valve flow selection valves ensures that the only wetted parts are the valve diaphragm and the valve seat, which is part of the manifold. In the standard flow selection valve, both parts are made of PTFE, offering the most chemically inert solution available. For different mechanical and chemical requirements, the customer also has the option of using PEEK™ or PPS for the manifold material and EPDM, Viton® or a perfluorelastomer for the diaphragm material.

Quick-Change Customization™

Through Bio-Chem Valve's Quick-Change Customization™ process, the standard flow selection valve configurations shown on this product data sheet can be modified to meet the customer's specifications. For possibilities regarding solenoid and spring response times, operating pressures, port threads and locations, wetted material and other features, please consult Bio-Chem Valve and Omnifit.

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Specifications

Valve Series

The flow selection valves are offered in three valve series, distinguished by the solenoid shell sizes:

Valve Series	Shell Diameter
040T	0.38 inches
080T	0.75 inches
105T	1.00 inches

Electrical

Valve Series	Voltage	Power @ 70°F (21°C)	Current @ 70°F (21°C)
040T	12 VDC	1.9 Watts	0.17 amps
040T	24 VDC	1.9 Watts	0.08 amps
080T	12 VDC	2.6 Watts	0.22 amps
080T	24 VDC	2.6 Watts	0.10 amps
105T	12 VDC	8.0 Watts	0.63 amps
105T	24 VDC	8.0 Watts	0.33 amps

Note: 115 VAC and 220 VAC solenoid coils are also available.

Flow Configurations

Valve Series	Number of Inlet Ports Available						
	2	3	4	5	6	8	10
040T		✓	✓				
080T	✓	✓	✓	✓	✓	✓	✓
105T	✓	✓	✓		✓		

Note 1: All flow selection valves have a common outlet port.

Note 2: In fluid diverting applications, the inlet and outlet ports are reversed.

Note 3: The standard flow selection valves are offered with all ports normally closed. For the 080T and 105T series, normally open ports are optionally available.

Internal Volumes (µL)

Valve Series	Orifice Diameter	Common Port						Inlet Ports (per port)	
		T2	T3	T4	T5	T6	T8	T2	T3+
040T	0.032"	n/a	28 µl	36 µl	n/a	n/a	n/a	n/a	21 µl
040T	0.054"	n/a	60 µl	77 µl	n/a	n/a	n/a	n/a	44 µl
080T	0.032"	7 µl	24 µl	30 µl	45 µl	53 µl	96 µl	14 µl	15 µl
080T	0.062"	27 µl	91 µl	117 µl	174 µl	207 µl	373 µl	24 µl	35 µl
080T	0.078"	42 µl	140 µl	180 µl	269 µl	318 µl	574 µl	69 µl	69 µl
105T	0.092"	79 µl	233 µl	300 µl	n/a	616 µl	n/a	105 µl	110 µl
105T	0.125"	146 µl	444 µl	573 µl	n/a	1175 µl	n/a	233 µl	240 µl

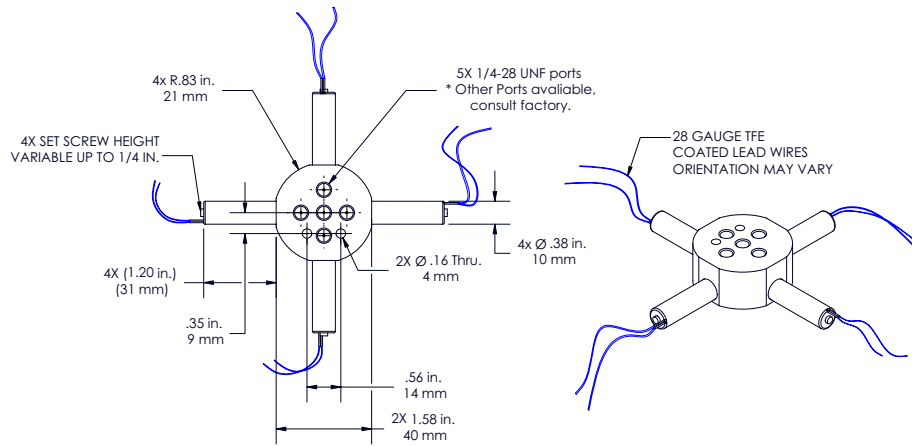
Orifice diameter options & maximum operating pressures

Valve Series	Orifice Diameters					
	0.032" (0.80 mm)	0.054" (1.40 mm)	0.062" (1.57 mm)	0.078" (1.98 mm)	0.092" (2.34 mm)	0.125" (3.18 mm)
040T	20 psi	20 psi	n/a	n/a	n/a	n/a
080T	20 psi	n/a	20 psi	10 psi	na/	n/a
105T	n/a	n/a	n/a	n/a	10 psi	10 psi

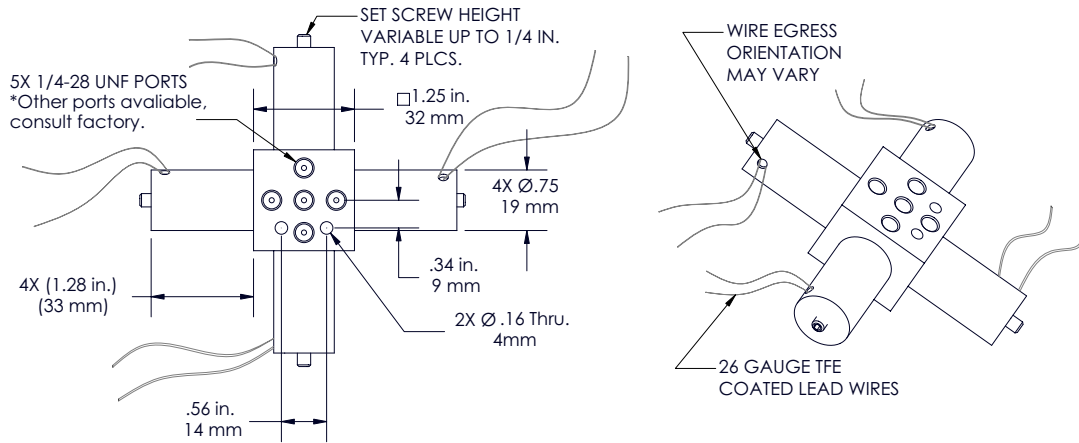
Note : All valves can be operated at a vacuum.

Installation Drawings

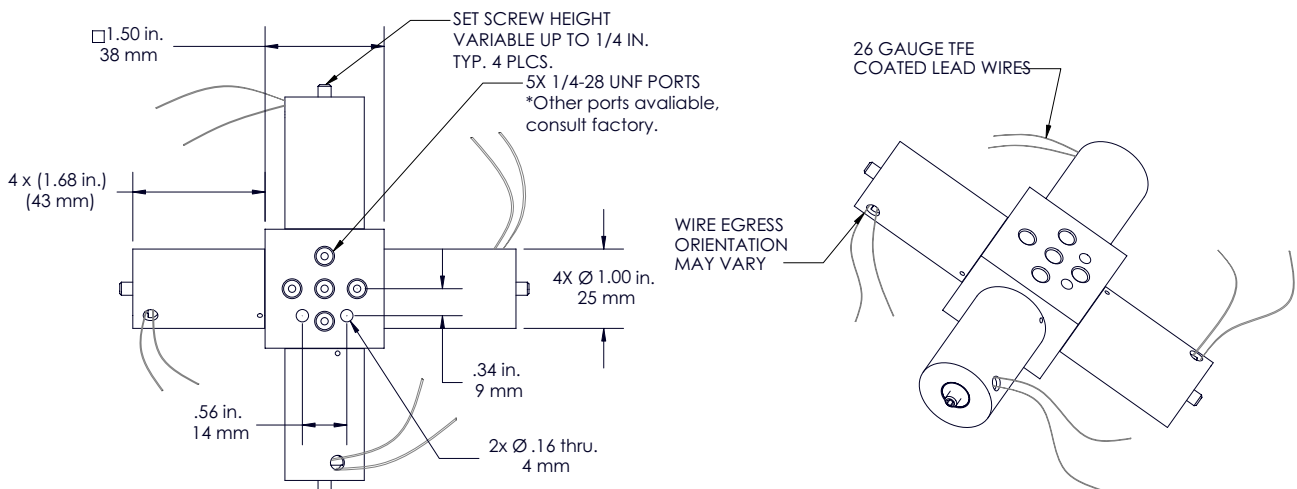
040T4



080T4



105T4



Rev. 1104