

Product Overview

Enfield Technologies LS-V05s model proportional valves are the newest addition to 5-Ported, 4-Way valve product offering. While compact, they remain big on versatility, with a rugged design specifically designed for in-line or custom manifold mounting. The bi-directional linear force motor and spool & sleeve combination ensure the valve's ability to precisely follow a command signal.

Features

- 5/3 Bi-Directional Proportional Flow Control
- Linear Force Motor
- Infinitely Variable Valve Positioning (3 Extreme Positions)
- Fast Shifting Time ($t_s < 2.4$ ms)
- High Bandwidth* ($f_{bw} = 109$ Hz)
- Low Hysteresis (avg. less than 5% of full scale range)
- Low Leakage

Typical Applications

- High-performance Open and Closed-Loop Systems:
 - Position Control
 - Motion Control
 - Flow Control
 - Force Control
 - Pressure Control
 - Ultra-Fast Switching (< 4.8 ms)

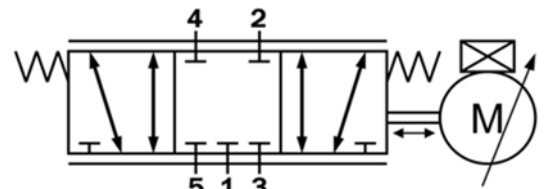
Industries

- Laboratory Test & Measurement
- Industrial Automation
- Animatronics
- Medical Equipment/Devices

*1Hz = One cycle through all three valve positions

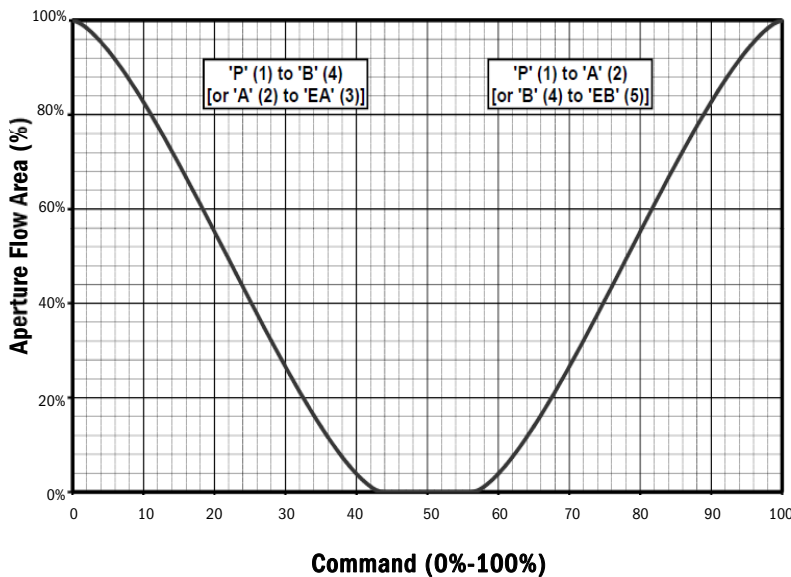


LS-V05s Pneumatic Control Valve

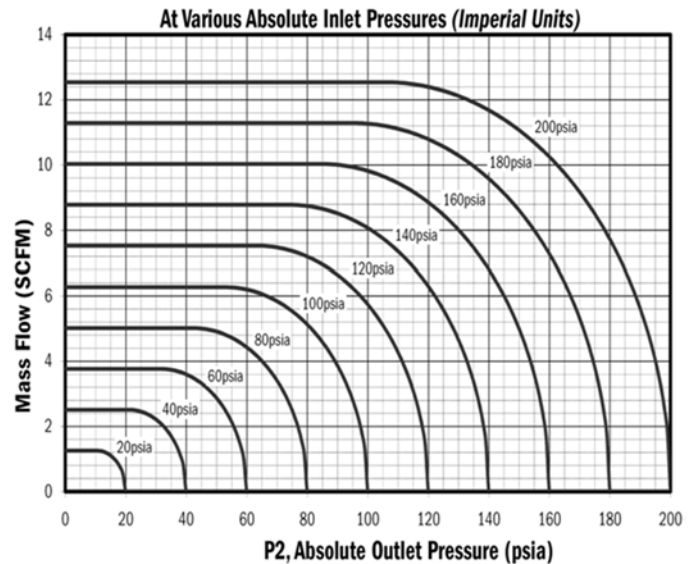


LS-V05s Valve Diagram (ISO 1219-1:1991)

LS-V05s Flow vs. Command



LS-V05s Mass Flow vs. Outlet Pressure



Specification	Value	
	SI Units	Imperial Units
Physical Characteristics		
Mass (Weight)	0,158 kg	(5.6 oz)
Approximate Physical Dimensions (L x W x H)	71.4 mm x 40.6 mm x 25.4 mm	2.81" x 1.60" x 1.00"
Materials	Aluminum, Nitrile, 440C SS, 316 SS, Nickel Plated Steel	
Valve Function	5-Port Bi-Directional Flow Control Valve, Normally Closed Center	
Valve Type	Lapped Spool and Sleeve	
Valve Actuation	Direct-Acting, Linear Force Motor	
Ports	10-32 UNF 3B	
Mounting Direction	Any	
Performance Characteristics		
Shifting Time (ISO 12238)	2.4 ms	
Bandwidth	109 Hz	
Pressure (at any port)	Vacuum → 1.03 MPa (10.3 bar)	Vacuum → 150 psig
Maximum Effective Aperture	5 mm ²	0.008 in ²
Flow Capacity and Critical Pressure Ratio (ISO 6358)	$C = 3.0 \times 10^{-8} \text{ s} \cdot \text{m}^4 / \text{kg}; b \approx 0.35$	$C_v = 0.13, K_v = 0.11$
Flow Rate of Air at 20 °C (68°F) and 65% RH (refer to Mass Flow Graphs)	3.5 g/s (6.0 bar → 5.0 bar)	6.0 SCFM (170 SLPM) (80 psig → atm)
Leakage Rate (150psig → atm)	6.75 SCFH (3.81 SLPM)	
Turndown Ratio	100:1	
Electrical Characteristics		
Power	3.6W Nominal	
Current	1.0A Max	
Electrical Connection	M8 3-Pin (Male)	
Environmental Characteristics		
Environmental Protection Class	IP54 (IEC 60529)	
Temperature	0°C - 50°C	32°F - 122°F
Humidity	5% - 95% RH	

Filtration Requirements

Clean, dry, non-lubricated air; 5 µm particulate and 0.3 µm coalescing filters recommended

Lubrication Requirements

Lubrication is not recommended and may void warranty.

Operating Fluids

Inert, non-flammable pneumatic fluids only. No liquids.

M8 3-Pin Male Connector
