

Product Overview

Enfield Technologies LS-V15s model proportional valves are the newest addition to 5-Ported, 4-Way in-line valve product offering. While they are small in size, 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 ($t_s = 2.5\text{ms}$)
- High Bandwidth* ($f_{bw} = 100\text{ Hz}$)
- 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 (<5.0ms)

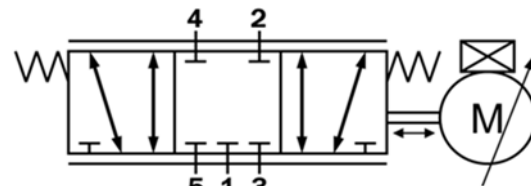
Industries

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

1HZ = One cycle through all three valve positions

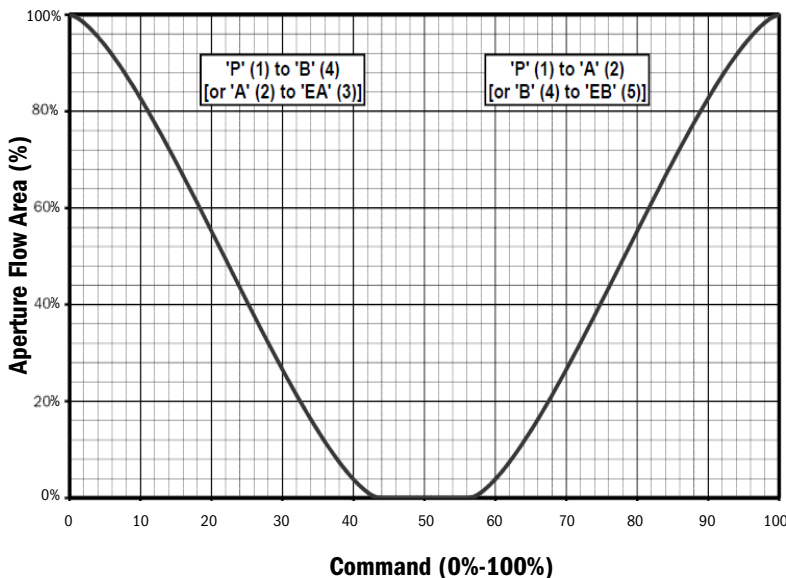


LS-V15s Pneumatic Control Valve

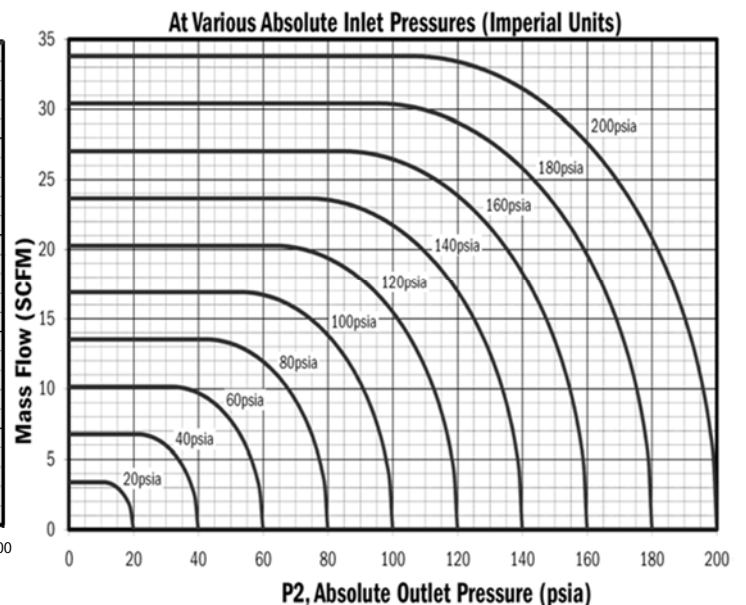


LS-V15s Valve Diagram (ISO 1219-1:1991)

LS-V15s Flow vs. Command



LS-V15s Mass Flow vs. Outlet Pressure



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Specification	Value	
Physical Characteristics	SI Units	Imperial Units
Mass (Weight)	0,462 kg	(16.4 oz)
Approximate Physical Dimensions (L x W x H)	99.3 mm x 61.0 mm x 35.1 mm	3.91" x 2.4" x 1.38"
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	1/8" NPTF	
Mounting Direction	Any	
Performance Characteristics		
Shifting Time (ISO 12238)	2.5 ms	
Bandwidth	100 Hz	
Pressure (at any port)	Vacuum → 1.03 MPa (10.3 bar)	Vacuum → 150 psig
Maximum Effective Aperture	15 mm ²	0.023 in ²
Flow Capacity and Critical Pressure Ratio (ISO 6358)	$C = 8.1 \times 10^{-8} \text{ s} \cdot \text{m}^4 / \text{kg}$; $b \approx 0.35$	$C_v = 0.35$, $K_v = 0.30$
Flow Rate of Air at 20 °C (68°F) and 65% RH (refer to Mass Flow Graphs)	9.56 g/s (6.0 bar → 5.0 bar)	16.21 SCFM (460 SLPM) (80 psig → atm)
Maximum Leakage Rate (150psig → atm)	12 SCFH (5.74 SLPM)	
Minimum Turndown Ratio	150:1	
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

