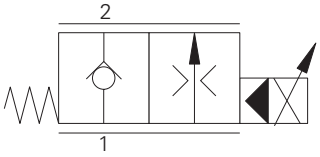
EPV16 - Proportional Valve

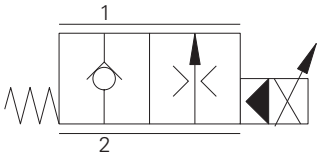
Proportional flow control, normally closed, poppet
160L/min (42 USgpm) • 280 bar (4000 psi)

B

EPV16A



EPV16B



Operation

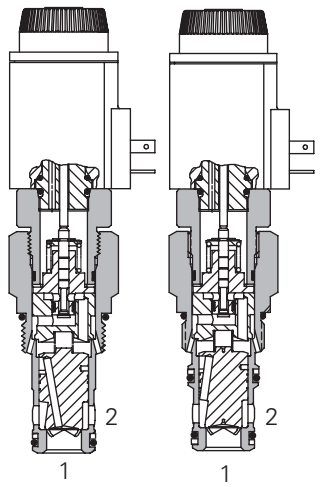
"A" style (nose in, side out) - In the de-energized position this valve remains closed from port 1 to port 2. When current is applied to the coil, a controlled increasing flow will be allowed from port 1 to port 2, in proportion to the current applied.

"B" style (side in, nose out) - in the de-energized position the valve remains closed from port 2 to port 1. When current is applied to the coil, a controlled increasing flow will be allowed from port 2 to port 1. In both examples free reverse flow is allowed in the opposite direction.

Features

Hardened and ground working parts. 280 bar working pressure, very low hysterisis, long life.

Sectional View



Description

This is a 2 way normally closed, pressure compensated, poppet type, electro proportional screw in cartridge valve with a low hysterisis and fine control. The valve is suitable for demanding applications where long life and accuracy is demanded

Performance Data

Ratings and Specifications

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)	
Typical application pressure (all ports)	280 bar (4000 psi)
Cartridge fatigue pressure (infinite life)	280 bar (4000 psi) NFPA rated
Rated flow	0 to 160 L/min (42 USgpm)
Internal leakage	EPV16A 50 cm^3/min, max @ 140 bar (2000 psi) EPV16B 10 cm^3/min, max @ 140 bar (2000 psi)
Oil viscosity range	10-800 cSt
Nominal supply voltage	12/24 VDC
Threshold current	Adj from 350-600 mA (12 VDC) Adj from 175-250 mA (24 VDC)
Coil current for maximum flow	0.7 amps @ 24 VDC 1.4 amps @ 12 VDC
Recommended PWM frequency	100-200 Hz application dependent, 150 Hz typ
Power consumption	12V-12.8 watts 24V-12.8 watts
Coil resistance	12v-6.5 /24V-25.0
Temperature range	-30° to 90°C (-22° to 194°F)
Cavity	C-16-3S (undercut)
Fluids	Antiwear hydraulic oils with Buna-N seals (standard) Phosphate esters (non-alkyl) with Viton®
Filtration	70-210 bar (1000-3000 psi) Cleanliness code 17/15/12 210+ bar (3000+ psi) Cleanliness code 15/13/11
Housing material (standard)	Aluminum or steel
Typical hysterisis	less than 4% of rated current @ 10 bar pressure drop-pulse width modulated (PWM)
Weight cartridge only	1 kg (2.2 lbs)
Seal kit	02-154069 (Buna-N)

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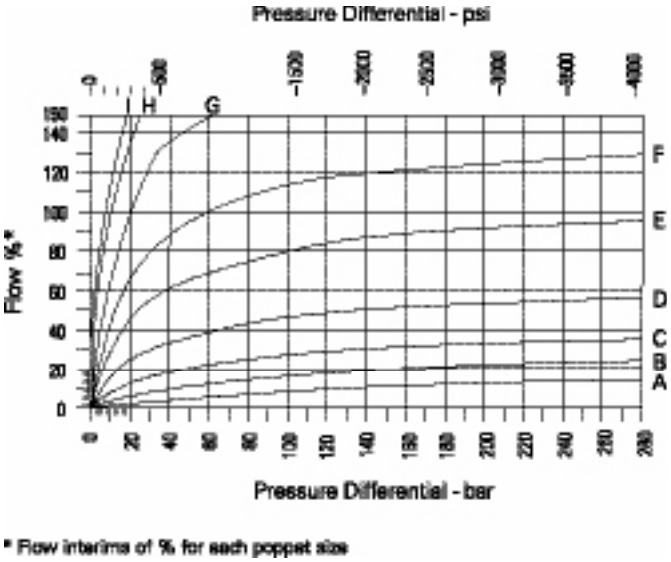
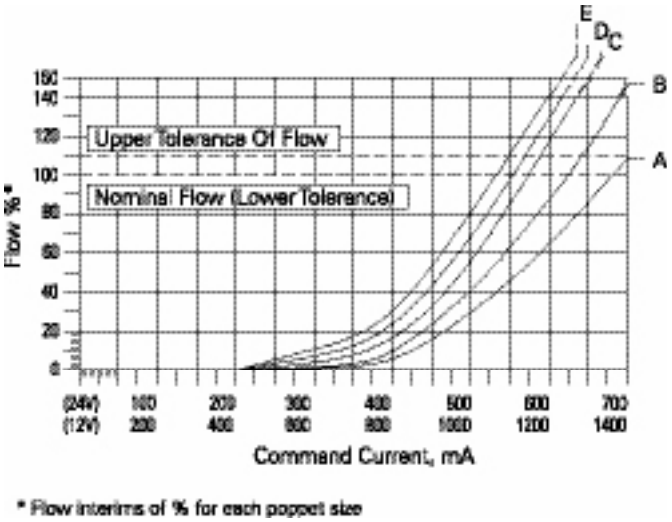
Pressure Drop Curves



* Flow interims of % for each poppet size



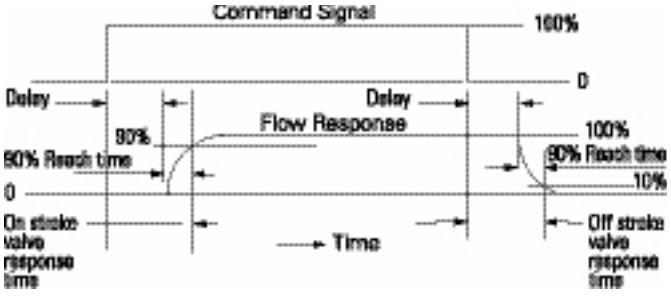
* Flow interims of % for each poppet size

Command Current

	12V	24V
A-	600 mA	300mA
B-	700 mA	350mA
C-	800 mA	400mA
D-	900 mA	450mA
E-	1000 mA	500mA
F-	1100 mA	550mA
G-	1200 mA	600mA
H-	1300 mA	650mA
I-	1400 mA	700mA

Pressure Differential

A-	10 bar	150 psi
B-	20 bar	300 psi
C-	50 bar	700 psi
D-	100 bar	1500 psi
E-	200 bar	3000 psi



Pressure Drop @ 120 L/min (30 USgpm)

Pressure Drop P	On Stroke Delay/Reach 90%	Off Stroke Delay/Reach 90%
20 bar (290 psi)	24 ms/35 ms	5 ms/15 ms
100 bar (1450 psi)	24 ms/17 ms	5 ms/7 ms

EPV16A

Dimensions

B

Dimensions
mm (inch)

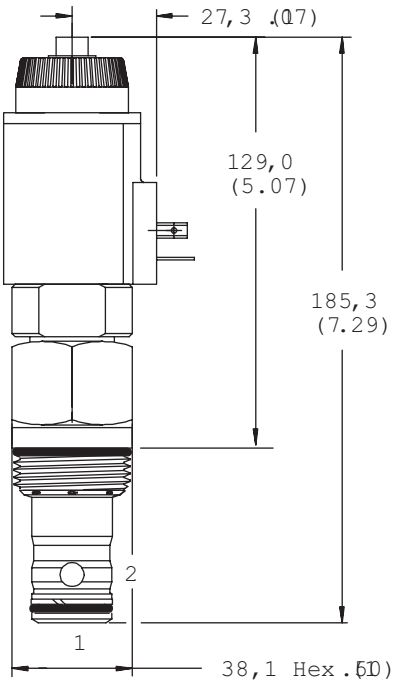
Valves are shown with "U" coil. See Section C for coil information.

Torque cartridge in aluminum housing 108-122 Nm (80-90 ft. lbs)

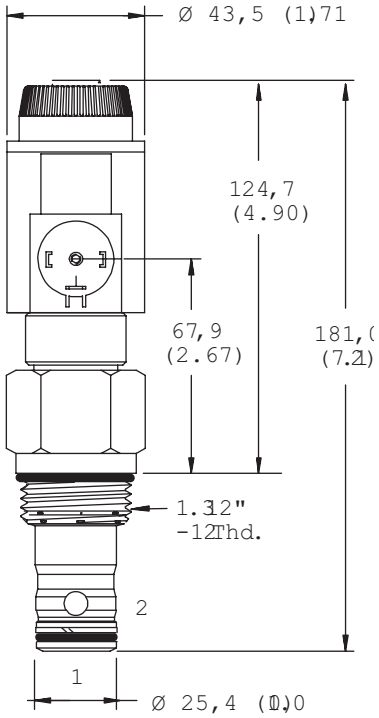
Torque cartridge in steel housing 136-149 Nm (100-110 ft. lbs)

Cartridge Only - EPV16A

Nose-in, side out



With manual actuator

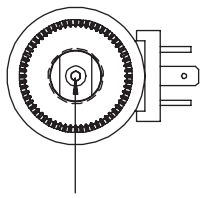


No manual actuator

Note:

When stand alone housings are used, the following guidelines apply:

- EPV16-A: Port 3 is to be plugged.
- EPV16-B: Port 3 is to be connected to port 1 in order to provide the required feedback flow path.



Screw type actuator (shown) 3 mm hex socket

Installation Drawing (Steel)