

# Proportional Valves

## EPV16-A

Proportional Flow Control Valve, Poppet Type, Normally Closed, Pilot Operated, Pressure Compensated

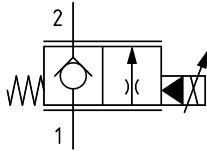
280 bar [4000 psi] • 160 l/min [42 US gpm]



### DESCRIPTION AND OPERATION

This is a 2-way, poppet type, normally closed, pressure compensated proportional flow control valve. In the de-energized condition, flow is blocked from port 1 to 2, while allowing free flow from port 2 to 1. Energizing the coil will proportionally open port 1 to 2, and the flow will remain constant irrespective of changes in pressure differential across the valve.

### SCHEMATIC



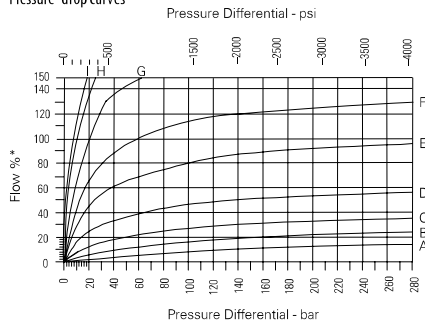
### PERFORMANCE DATA

|                           |                                                      |
|---------------------------|------------------------------------------------------|
| Rated pressure*           | 280 bar [4000 psi]                                   |
| Rated flow                | 160 l/min [42 US gpm]                                |
| Leakage                   | 50 ml/min @ 140 bar [2000 psi]                       |
| Maximum Hysteresis        | 4%                                                   |
| Recommended PWM frequency | 100-200 Hz                                           |
| Threshold current         | 350-600 mA [12 VDC coil]<br>175-250 mA [24 VDC coil] |
| Maximum control current   | 1.4 A [12 VDC coil]<br>0.7 A [24 VDC coil]           |
| Coil Options              | EPV series                                           |
| Weight                    | 1 kg [2.2 lb]                                        |
| Cavity                    | C-16-3SU                                             |

\*Rated pressure based on NFPA fatigue test standards (at 1 million cycles)

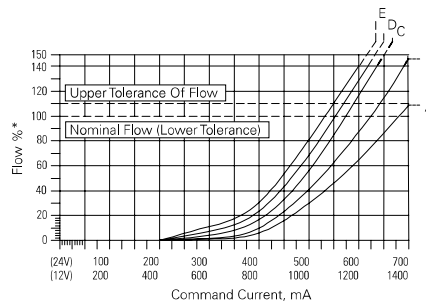
### PERFORMANCE CURVES

Pressure drop curves



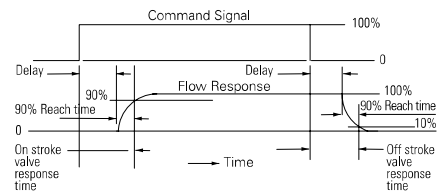
\* Flow interims of % for each poppet size

| Command current | 12 V     | 24 V   |
|-----------------|----------|--------|
| A-              | 60.0 mA  | 300 mA |
| B-              | 70.0 mA  | 350 mA |
| C-              | 80.0 mA  | 400 mA |
| D-              | 90.0 mA  | 450 mA |
| E-              | 100.0 mA | 500 mA |
| F-              | 110.0 mA | 550 mA |
| G-              | 120.0 mA | 600 mA |
| H-              | 130.0 mA | 650 mA |
| I-              | 140.0 mA | 700 mA |



\* Flow interims of % for each poppet size

| Pressure differential | 10 bar  | 50 psi   |
|-----------------------|---------|----------|
| A-                    | 10 bar  | 50 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 DP   | 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                  |

# Proportional Valves

## EPV16-A

Proportional Flow Control Valve, Poppet Type, Normally Closed, Pilot Operated, Pressure Compensated

280 bar [4000 psi] • 160 l/min [42 US gpm]



### DIMENSIONS

mm [in]

#### Coil Nut Torque

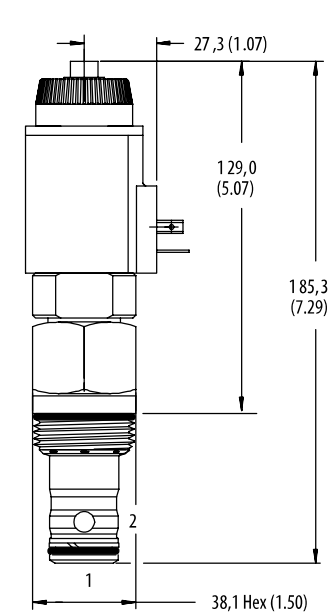
2.5-3.0 Nm [22-27 in lbs]

#### Installation torque

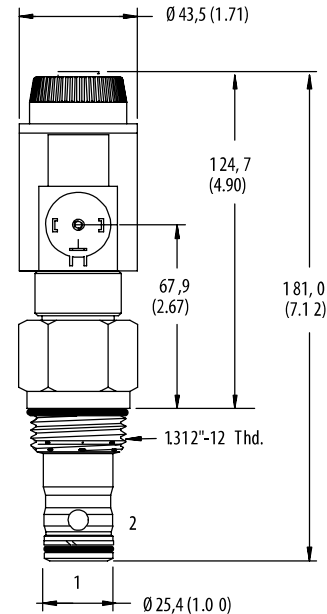
A - 108-122 Nm [80-90 ft. lbs]

S - 136-149 Nm [100-110 ft. lbs]

\*Port 3 of the C-16-3SU cavity is to be plugged



With Manual Override



No manual override

### MODEL CODE

EPV16 - A - 04 - A - 4G - N - 12D - M - N - 13

#### Max Regulated Flow

| Code | Flow                   |
|------|------------------------|
| 04   | 40 l/min (10.5 US gpm) |
| 06   | 60 l/min (16 US gpm)   |
| 10   | 100 l/min (26 US gpm)  |
| 16   | 160 l/min (42 US gpm)  |

#### Housing Material

Omit - No housing  
A - Aluminium  
S - Steel

#### Connector Type

0 - No coil  
W - Flying lead  
N - Deutsch (DT04-2P)  
Y - Metripack 150 male  
U - DIN 43650

#### Housing

| Code | Ports      | Aluminium | Steel     |
|------|------------|-----------|-----------|
| 0    | No housing |           |           |
| 4G   | 1/2" BSP   | 02-185448 | 02-180050 |
| 6G   | 3/4" BSP   | 02-185449 | 02-180051 |
| 10H  | #10 SAE    | 02-185450 | 02-180048 |
| 12H  | #12 SAE    | 02-185447 | 02-180049 |

\* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].

\* Additional housings available

#### Manual Override Option

Omit - No manual override  
M - Pin type  
S - Screw type

#### Coil Voltage

00 - No coil, nut included (p/n 02-148332)  
12D - 12VDC  
24D - 24VDC

\*Use EPV series, 16W coils

#### Seal Option

| Code                                    | Seal Kit  |
|-----------------------------------------|-----------|
| N - Buna - N (standard)                 | 02-154069 |
| V - Viton                               | 1203263   |
| NF - Buna - N and 60 mesh filter screen |           |
| VF - Viton and 60 mesh filter screen    |           |