PV70-35 Proportional, Spool, Normally Open

DESCRIPTION
A solenoid-operated, spool-type, normally open, proportional flow control valve designed for use with a pressure compensator to function as a proportional flow regulator.

OPERATION
The PV70-35 provides regulated flow from port 2 to port 3. Port 1 should be plugged. Flow is inversely proportional to current applied to solenoid.

Operation of Manual Override:
To Engage: Turn clockwise approximately 1 turn to reach start point. Continue another approximately 5 turns to full shift.
To Disengage: Turn counterclockwise approximately 6 turns to positive stop.

FEATURES
• Choice of several regulated flow ranges.
• Manual override options.
• Excellent linearity and hysteresis.
• Hardened spool and cage for long life.
• Optional coil voltages and terminations.
• Cartridges voltage interchangeable.
• Unitized, molded coil design.
• Coil waterproofing standard.
• Optional control orifice sizes.
• Efficient wet armature construction.

RATINGS
Operating Pressure: Inlet (Port 1) 241 bar (3500 psi); Regulated (Port 3) 207 bar (3000 psi); Bypass (Port 2) 207 bar (3000 psi)
Proof Pressure: 345 bar (5000 psi)
Burst Pressure: (896 bar (13,000 psi)
Flow Rating: Range A - 0 to 45.4 lpm (0 to 14 gpm) Range B - 0 to 41.6 lpm (0 to 11 gpm); Range C - 0 to 18.9 lpm (0 to 5 gpm)
Internal Leakage: 197 cc/min. (12 cu. in./min.) fully closed at 207 bar (3000 psi)
Operating Temperature: -40 to 100°C (-40 to 212°F) with standard Buna N seals; -26 to 204°C (-15 to 400°F) with fluorcarbon seals
Electrical: (with 70-size D-series and E-series coils)

<table>
<thead>
<tr>
<th>Coil Voltage (VDC)</th>
<th>Valve Inductance (mH)</th>
<th>Threshold Current (mA)</th>
<th>Maximum Control Current (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>E-Coil: 240 D-Coil: 200</td>
<td>300 ± 200</td>
<td>1500 ± 100</td>
</tr>
<tr>
<td>24</td>
<td>700</td>
<td>600</td>
<td>750 ± 50</td>
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</tbody>
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Hysteresis: ± 0.9 lpm (0.25 gpm) maximum

Dither/PWM Frequency Range: 100 to 250 Hz

Filtration: See page 9.010.1

Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1

Installation: Install D-series coils with two O-rings above and below the coil. Install E-series coils with only one O-ring above the coil. Manual override options M and G require Coil Nut Kits. See part numbers below. See Cartridge Installation, page 9.020.1 for cartridge, coil and coil retainer installation. To assure proper function, coil retainer must be installed.

Cavity: VC10-3; See page 9.110.1
Cavity Tool: CT10-3X-XX; See page 8.600.1
Seal Kit: SK10-3X-MM; See page 8.650.1 for seal kit options and appropriate seals based on application temperature range.

Coil Nut Kits (for Manual Override Option G): 4001214; (for Option M): 420218
DIMENSIONS

PV70-35

MATERIALS

Cartridge: Weight: 0.32 kg. (0.71 lb.)
With M option: 0.38 kg. (0.84 lb.)
With G option: 0.47 kg. (1.03 lb.)
Steel with hardened work surfaces.
Zinc-plated exposed surfaces.
Buna N O-rings and polyester elastomer back-ups standard.

Standard Ported Body: Weight: 0.36 kg. (0.80 lbs.)
Anodized high-strength aluminum alloy, rated to 207 bar (3000 psi).
Ductile iron bodies available; dimensions may differ. See page 8.010.1

70-Size “D” Coil: Weight: 0.32 kg. (0.7 lbs.)
Unitized thermoplastic encapsulated, Class H high temperature magnet-wire.
See page 3.200.7.

70-Size “E” Coil: Weight: 0.41 kg. (0.9 lbs.)
Fully encapsulated with rugged external metal shell.
IP69K rated. See page 3.400.13.

TO ORDER

Regulated Flow Range
0-45.4 lpm (0-14 gpm) A
0-37.8 lpm (0-10 gpm) B
0-18.9 lpm (0-5 gpm) C

Option(s)
None (Blank)
Manual Override M
Manual Override with Guard G

Porting
0 Cartridge Only
6T SAE 6
8T SAE 8
2B 1/4 in. BSP*
3B 3/8 in. BSP*

Seals
Buna N (Std.) N
Fluorocarbon V

* Requires Coil Nut Kit P/N 4202180
** Requires Coil Nut Kit P/N 4001214

Terminations D-Coil
DS Dual Spades
DG DIN 43650
DL Leadwires (2)
DL/W Leads w/Weatherpak® Connectors

Terminations E-Coil
IP69K Rated
ER Deutsch DT04-2P
EY Metri-Pack® 150

Voltage
0 Less Coil
12 12 VDC
24 24 VDC