PV72-30 Proportional Flow Control, Bypass,

**DESCRIPTION**
A solenoid-operated, pressure-compensated, spool-type, normally closed when de-energized, proportional flow control valve. It can be used as a priority-type flow regulator with pressure-compensated, regulated and bypass flow. It can also be used as a restrictive-type 2-way, pressure-compensated flow regulator when the bypass line (port 2) is blocked.

**OPERATION**
The PV72-30 provides priority-regulated flow at port 3 with pressure-compensated regulated and bypass flow. The regulated flow is proportional to electric current applied to the 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 two regulated flow ranges.
- Excellent linearity and hysteresis.
- Efficient wet armature construction.
- Optional coil voltages and terminations.
- Cartridges voltage interchangeable.
- Unitized, molded coil design.
- Coil waterproofing standard.
- Manual override options.

**RATINGS**
- **Operating Pressure:** 240 bar (3500 psi)
- **Proof Pressure:** 345 bar (5000 psi)
- **Burst Pressure:** 896 bar (13000 psi)
- **Flow Rating:** Range A: 0-57 lpm (0-15 gpm); Range B: 0-38 lpm (0-10 gpm)
- **Internal Leakage:** 0.38 lpm (0.1 gpm) max @ 0 current

**Electrical Parameters:** (with size 70 E-series and D-series coils):

<table>
<thead>
<tr>
<th>Coil Voltage (VDC)</th>
<th>Valve Inductance (mH)</th>
<th>Threshold Current (mA)</th>
<th>Max Control Current (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>240</td>
<td>350+100</td>
<td>1600±200</td>
</tr>
<tr>
<td>24</td>
<td>700</td>
<td>175±50</td>
<td>800±100</td>
</tr>
</tbody>
</table>

**Hysteresis:** 1.9 lpm (0.50 gpm) max

**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:** VC12-3; See page 9.112.1  Cavity Tool: CT12-3X-XX; See page 8.600.1

**Seal Kit:** SK12-3X-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 Manual Override Option M): 4202182

**PERFORMANCE**

**Regulated Flow vs. Load**
3-Ported - Range A - Input Flow: 76 lpm/20 gpm
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C (104°F)

**Regulated Flow vs. Load**
3-Ported - Range B - Input Flow: 76 lpm/20 gpm
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C (104°F)
Normally Closed

**PV72-30**

**PERFORMANCE (Continued)**

Flow vs. Pressure Drop
2-Ported; Flow Range A
240 bar/3500 psi inlet
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C (104°F)

<table>
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<tr>
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<td>0.5 AMP</td>
</tr>
<tr>
<td>400</td>
<td>0.1 AMP</td>
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Flow vs. Pressure Drop
2-Ported; Flow Range B
240 bar/3500 psi inlet
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C (104°F)

<table>
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**DIMENSIONS**

MANUAL OVERRIDE OPTION "M"
MANUAL OVERRIDE OPTION "G"

**MATERIALS**

Cartridge: Weight: 0.42 kg. (0.93 lb.); with M option: 0.47 kg; (1.03 lb.); with G option 0.56 kg. (1.23 lb.). Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and polyester elastomer back-ups standard.

Standard Ported Body: Weight: 1.09 kg. (2.4 lbs.) Anodized high-strength aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.012.1

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**

PV72-30

Flow Range
0-57 lpm (0-15 gpm) A
0-38 lpm (0-10 gpm) B

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

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

Seals
Buna N (Std.) N
Fluorocarbon V
Polyurethane P

Terminations D-Coil
DS Dual Spades
DL Leadwires (2)

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

Voltage
0 Less Coil
12 12 VDC
24 24 VDC