DESCRIPTION
A solenoid-operated, pressure-compensated, spool-type, two-port flow regulator that is normally closed when de-energized. This combination valve uses a PV70-33x proportional cartridge and an EC10-30 compensator.

OPERATION
This proportional valve/compensator package will regulate flow out of port ➁, regardless of system working pressure. With an increasing current applied to the solenoid, the PFR70-33x-E will increase output flow.

FEATURES
• Excellent linearity and hysteresis.
• Optional control orifice sizes.
• Hardened spool and cage for long life.
• Optional coil voltages and terminations.
• Efficient wet armature construction.

RATINGS
Operating Pressure: 207 bar (3000 psi)
Internal Leakage: 410 cc/min. (25 cu. in./min.) fully closed at 207 bar (3000 psi) out port ➁.

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

<table>
<thead>
<tr>
<th>Coil Voltage</th>
<th>Threshold Current (mA)</th>
<th>Max. Control Current (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A &amp; B Range</td>
<td>C Range</td>
</tr>
<tr>
<td>12 VDC</td>
<td>300 ± 70</td>
<td>360 ± 70</td>
</tr>
<tr>
<td>24 VDC</td>
<td>150 ± 35</td>
<td>180 ± 35</td>
</tr>
</tbody>
</table>

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 until positive stop is found.

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: No restrictions; See page 9.020.1

PERFORMANCE CURVES
Regulated Flow Delivered Out Port ➁:
24 Volt coil used; 130 Hz dither; PWM controller

Flow vs. Current (207 bar/3000 psi Load)
PV70-33A with EC10-30
11 bar/160 psi spring ———
5.5 bar/80 psi spring · · · ·
100 Hz Dither

Flow vs. Current (207 bar/3000 psi Load)
PV70-33B with EC10-30
11 bar/160 psi spring ———
5.5 bar/80 psi spring · · · ·
100 Hz Dither

Flow vs. Current (207 bar/3000 psi Load)
PV70-33C with EC10-30
11 bar/160 psi spring ———
5.5 bar/80 psi spring · · · ·
100 Hz Dither
**2-Port, Pressure Compensated PFR70-33x-E**

**DIMENSIONS**

**MATERIALS**

**Cartridge:** Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and back-ups standard.

**Standard Ported Body:** Anodized high-strength aluminum alloy, rated to 207 bar (3000 psi).

**Coil:** D-Coil: See page 3.200.1  
E-Coil: See page 3.400.1

**Package Weight:** 2.3 kg. (5.0 lbs.)

**Seal Kit:** SK10-3x-MM (PV)  
SK10-3x-TB (EC)

**TO ORDER**

- **PFR70-33**
- **E**
- **8T**

- **PV Orifice Range**
  - Orifice Range A
  - Orifice Range B (Blank)
  - Orifice Range C

- **Manual Override Option**
  - Option M
  - Option G

- **Compensator Spring**
  - 2.76 bar (40 psi) 40
  - 5.52 bar (80 psi) 80
  - 11.03 bar (160 psi) 160

- **Seals**
  - Buna N (Std.) N
  - Fluorocarbon V

**Terminations D-Coil**

- DS Dual Spades
- DG DIN 43650
- DL Leadwires (2)
- DL/W Leads w/Weatherpack® Connectors

**Terminations E-Coil**

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

**Voltage**

- 0 Less Coil
- 12 12 VDC
- 24 24 VDC

* Select Orifice Range and Compensator Spring by referring to the Performance Curves on the preceding page.

* Select Orifice Range and Compensator Spring by referring to the Performance Curves on the preceding page.

* The normally open PV70-35 may not be substituted in this manifold due to port logic factors.

Terminations D-Coil

- DS Dual Spades
- DG DIN 43650
- DL Leadwires (2)
- DL/W Leads w/Weatherpack® Connectors

Terminations E-Coil

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Voltage

- 0 Less Coil
- 12 12 VDC
- 24 24 VDC