

## CONFIGURATION

|               |               |                                                           |
|---------------|---------------|-----------------------------------------------------------|
| <b>X</b>      | Control       | No Manual Override                                        |
| <b>D</b>      | Flow Rate     | Nominal 5 gpm @ 200 psi (14 bar) differential (20 L/min.) |
| <b>N</b>      | Seal Material | Buna-N                                                    |
| <b>(none)</b> | Coil          | No coil                                                   |

This valve is a pilot-operated, normally open, electro-proportional throttle with reverse free-flow check. Energizing the coil generates a closing force on the pilot stage which pushes the main stage poppet against the seat, proportionally blocking flow from port 2 to 1. In the open condition, flow from 1 to 2 will cause the valve to auto-close and only pilot flow will pass from 1 to 2.

## TECHNICAL DATA

NOTE: DATA MAY VARY BY CONFIGURATION. SEE CONFIGURATION SECTION.

|                                              |                                      |
|----------------------------------------------|--------------------------------------|
| Cavity                                       | T-162A                               |
| Series                                       | 0                                    |
| Capacity                                     | 5 gpm                                |
| Maximum Operating Pressure                   | 3000 psi                             |
| Hysteresis (with dither)                     | 15%                                  |
| Linearity (with dither)                      | 3%                                   |
| Repeatability (with dither)                  | 3%                                   |
| Recommended dither frequency                 | 140 Hz                               |
| Maximum Valve Leakage at 110 SUS (24 cSt)    | 0.004 in <sup>3</sup> /min.@3000 psi |
| Check Cracking Pressure                      | 100 psi                              |
| Viscosity Range                              | 35 - 2000 SUS                        |
| Deadband, nominal (as a percentage of input) | 48%                                  |
| Response Time - Typical                      | 50 ms                                |
| Switching Frequency                          | 15,000 max. cycles/hr                |
| Valve Hex Size                               | 3/4 in.                              |
| Valve Installation Torque                    | 20 - 25 lbf ft                       |
| Seal kit - Cartridge                         | Buna: 990162007                      |
| Seal kit - Cartridge                         | Viton: 990162006                     |
| Model Weight                                 | 0.57 lb.                             |

## NOTES

- Please verify cartridge clearance requirements when choosing a Sun manifold. Different valve controls and coils require different clearances.
- An additional 2.00 inches (50,8 mm) beyond the valve extension is needed for coil installation and removal.

## CONFIGURATION OPTIONS

### Model Code Example: FPBMArray

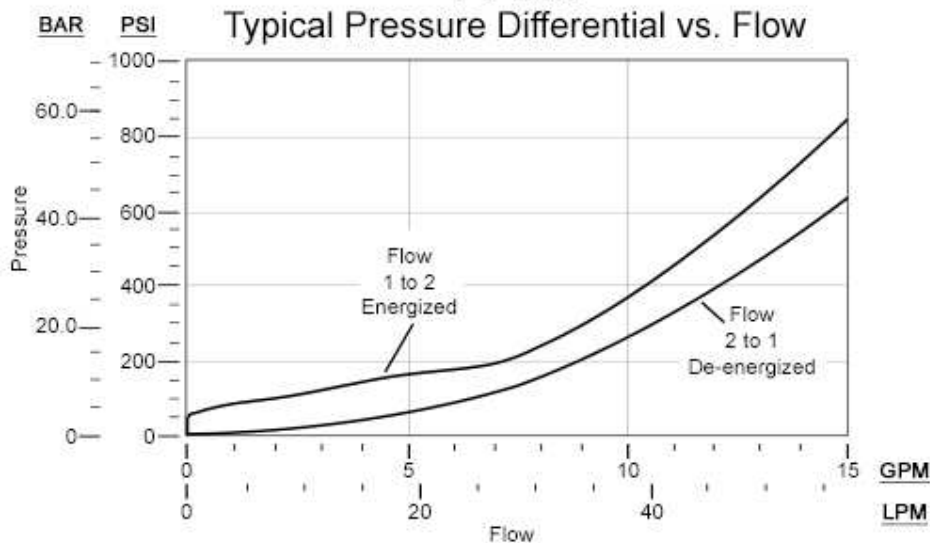
| CONTROL                     | (X) FLOW RATE                                                      | (D) SEAL MATERIAL                 | (N) COIL *                                                |
|-----------------------------|--------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------|
| <b>X</b> No Manual Override | <b>D</b> Nominal 5 gpm @ 200 psi (14 bar) differential (20 L/min.) | <b>N</b> Buna-N<br><b>V</b> Viton | <b>No coil</b><br>* Additional coil options are available |

## TECHNICAL FEATURES

- FLeX Series proportional valves are fully compatible with the XMD Expandable Mobile Drivers from Sun.
- Designed and tested to 10 million on-off operational cycles.
- Exceeds new NFPA test standard T2.6.1 R2014 for fatigue and burst pressure ratings.
- Improved linearity and resolution over similar competing valves.
- Designed using CFD fluid simulation for optimized geometries.
- For optimum performance, an amplifier with current feedback and adjustable dither (100 - 250 Hz) should be used.
- Capacities rated at 200-psi (14-bar) differential.
- Depending on circuit requirements, a reverse free flow check bypassing the compensator may be needed when using an FPB\* with an external compensator.
- All configurations of this valve include zinc-nickel plating as standard for 1000-hour salt fog protection.
- A wide variety of coil termination and voltage options are available, with and without surge protection. See the CONFIGURATION section.
- Coil connector options offer ratings up to IP69K. See individual coil product pages for details.
- This valve utilizes the 740 Series low-power coils.
- A FULL DATA SHEET is available for this model using the link at the top of the page.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

## PERFORMANCE CURVES

### FPBM



# FPBM

Flow vs. Coil Current

