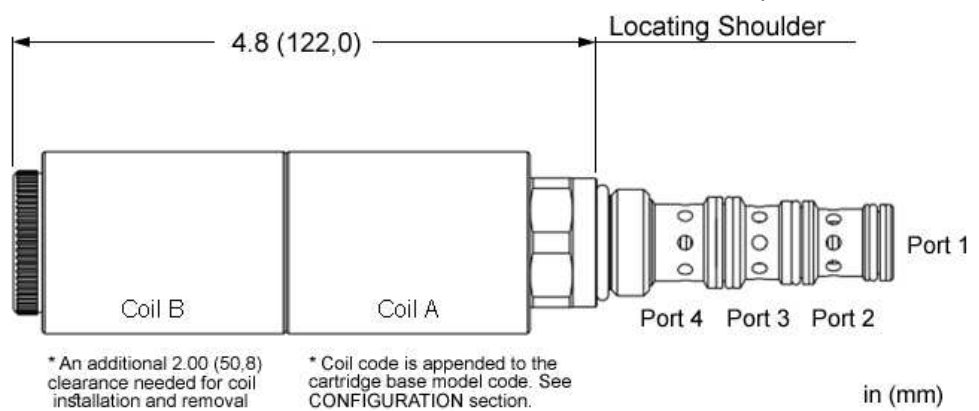
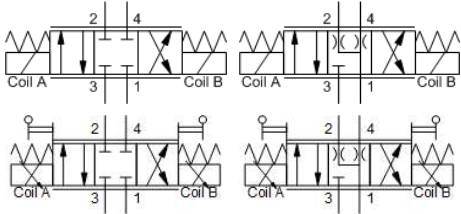




This valve is a solenoid-operated 3-position, 4-way proportional directional valve spring centered to the neutral position. It is available with a Blocked Center condition or an A and B Bleed to T Center condition. The flow from Port 3 (P) to Port 2 (B) and from Port 4 (A) to Port 1 (T) increases proportionally to the current applied to coil A. The flow from Port 3 (P) to Port 4 (A) and from Port 2 (A) to Port 1 (T) increases proportionally to the current applied to coil B.

TECHNICAL DATA

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

Cavity	SC-10-04
Series	1C
Capacity	40 L/min.
Maximum Operating Pressure	250 bar
Typical Valve Leakage at 110 SUS (24cSt)	110 mL/min.@3600 psi
Response Time - Typical	50 ms
Solenoid Tube Diameter	19 mm
Valve Hex Size	25,4 mm
Coil Nut Torque	4,8 - 5,3 Nm
Valve Installation Torque	38 - 43 Nm
Mounting Bolt Installation Torque (T Control)	5,7 - 6,2 Nm
Model Weight (with coil)	0,55 kg

PROPORTIONAL PERFORMANCE DATA

Hysteresis (with dither)	<20%
Recommended dither frequency	A & V spool: 160 Hz, C & X spool: 220 Hz, E & Z spool: 320 Hz
Linearity (with dither and compensated)	<8%

CONFIGURATION OPTIONS

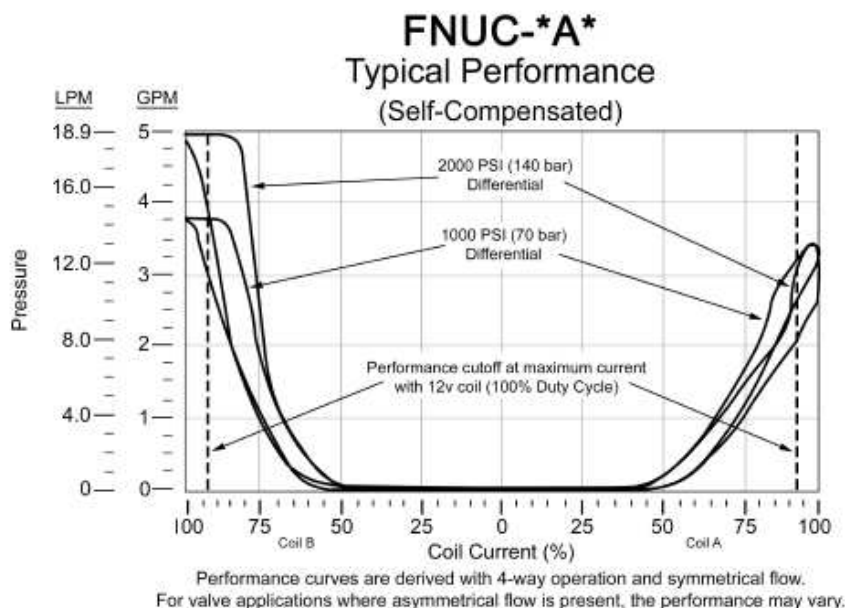
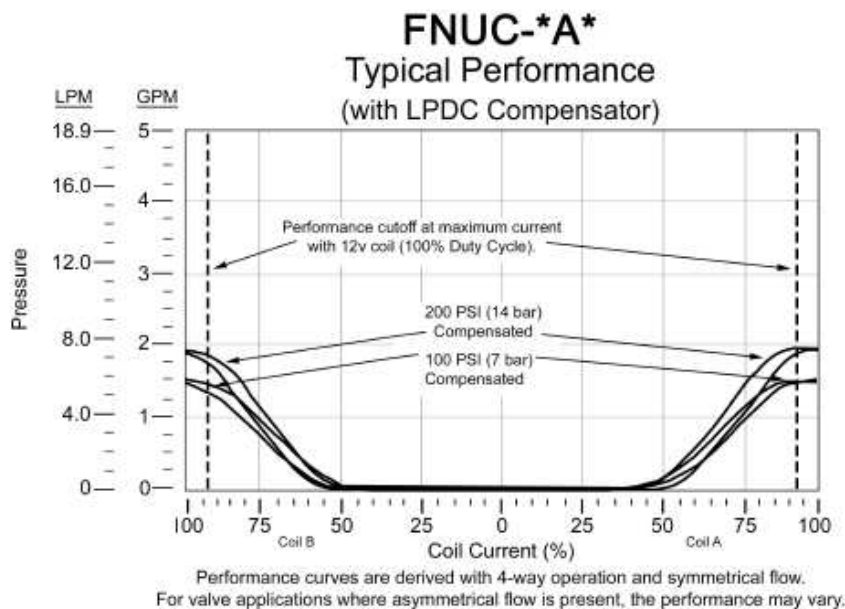
Model Code Example: FNUCXEN

CONTROL	(X) FLOW RATE	(E) SEAL MATERIAL	(N) COIL *
X No Manual Override	E 8 gpm Blocked Center (30 L/min.)	N Buna-N	No coil
T Lever (Momentary) Manual Override	A 1.3 gpm Blocked Center (4,8 L/min.)		* Additional coil options are available
	C 4 gpm Blocked Center (15 L/min.)		
	V 1.3 gpm A and B Bleed to Center (4,8 L/min.)		
	X 4 gpm A and B Bleed to Center (15 L/min.)		
	Z 8 gpm A and B Bleed to Center (30 L/min.)		

TECHNICAL FEATURES

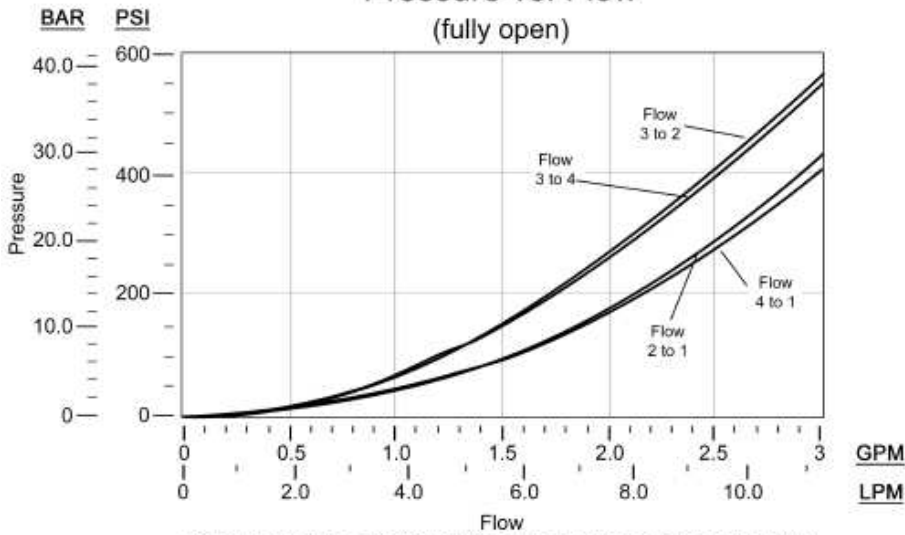
- This valve is direct actuated and requires no minimum hydraulic pressure for operation.
- The metal coil nut is a functional feature of the valve and should be correctly installed for proper performance of the valve.
- Coil connector options offer ratings up to IP67. See individual coil product pages for details.
- Port 1 (Tank) is rated to a maximum of 1000 psi (70 bar). All other ports are rated to a maximum operating pressure of 3600 psi (250 bar).
- The cartridge installation torque of 30 lbf ft (40 Nm) is required for best performance.
- There are three flow ranges for each center configuration. See performance curves for more information.
- For best performance, an amplifier with current sensing and adjustable dither should be used. Reported performance is at recommended dither.
- Recommended dither varies per spool type (see proportional performance data) and may be adjusted to better suit the application.
- For best stability and control, recommended use is with a properly-sized restrictive (LPDC) or bypass (LRDC) compensator. Provisions to dampen the load-sense line of the compensator may be helpful in achieving the best performance.
- Self-compensated use is possible to a degree. Please refer to performance curves for details. For more precise flow control consider a separate compensator.
- Use of this valve with its 12V coil variants (778212 and 778912D) yields a lower rated performance when operating the coil at a 100% duty cycle. See performance curves for details.
- The valve is available with a manual override option (T control). This hand-actuated lever option is also rated to a maximum of 1000 psi (70 bar) at Port 1 and can be actuated under pressure. Rotating the lever away from the manifold block will connect port 3 to port 4 and port 2 to port 1. Rotating the lever towards the manifold block will connect port 3 to port 2 and port 4 to port 1.
- The manual override option includes two mounting bolts which fasten the mechanism onto the valve via mounting holes on the manifold. For details on the mounting holes, refer to the product page of any Sun manifold configured with an SC-10-04 cavity (i.e. model code: JPA).
- This valve utilizes a wet armature design. This means that the working fluid surrounds the armature and is exposed to the heat generated by the coil. This can be a factor if the coil is energized for long periods of time. Some fluids, notably water/glycol mixtures, break down at these temperatures over time and form varnishes that will affect the function of the cartridge.
- Coils can be mounted on the tube in either direction.

PERFORMANCE CURVES



FNUC-*A*

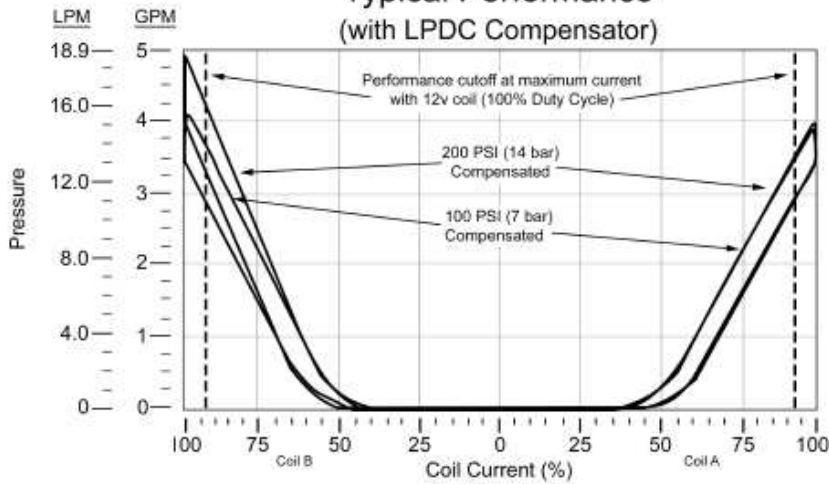
Pressure vs. Flow (fully open)



Performance curves are derived with 4-way operation and symmetrical flow.
For valve applications where asymmetrical flow is present, the performance may vary.

FNUC-*C*

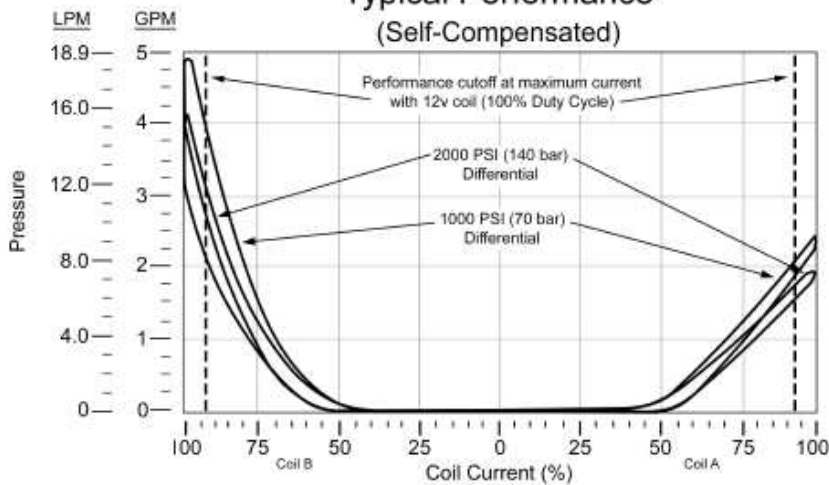
Typical Performance (with LPDC Compensator)



Performance curves are derived with 4-way operation and symmetrical flow.
For valve applications where asymmetrical flow is present, the performance may vary.

FNUC-*C*

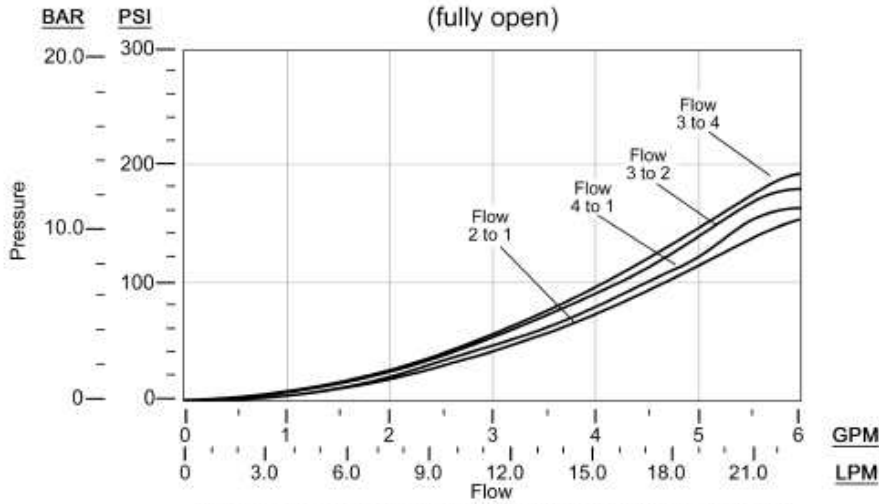
Typical Performance (Self-Compensated)



Performance curves are derived with 4-way operation and symmetrical flow.
For valve applications where asymmetrical flow is present, the performance may vary.

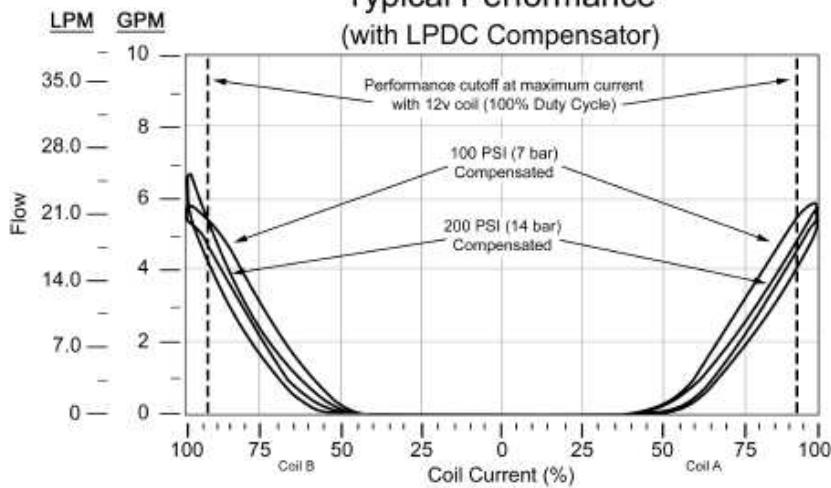
FNUC-*C*

Pressure vs. Flow (fully open)



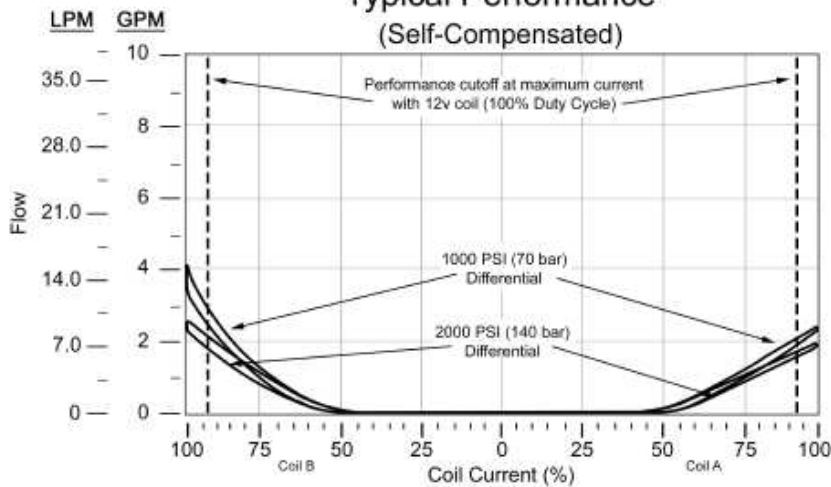
FNUC-*E*

Typical Performance (with LPDC Compensator)



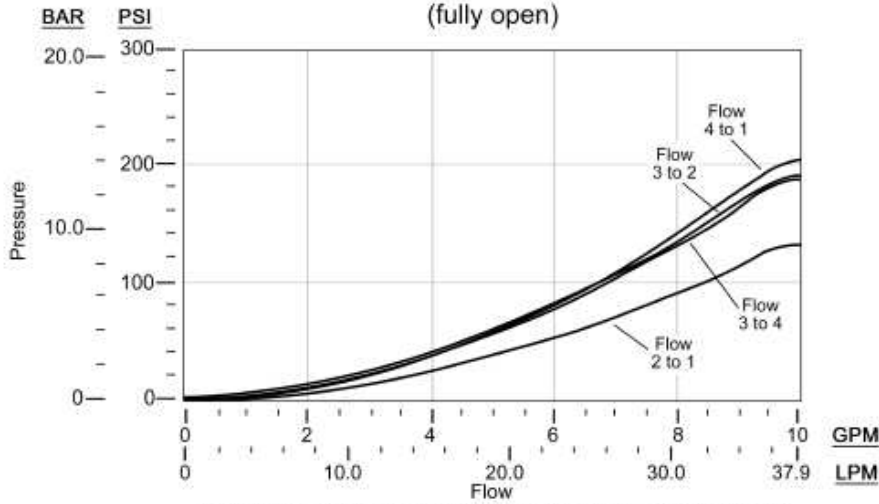
FNUC-*E*

Typical Performance (Self-Compensated)



FNUC-*E*

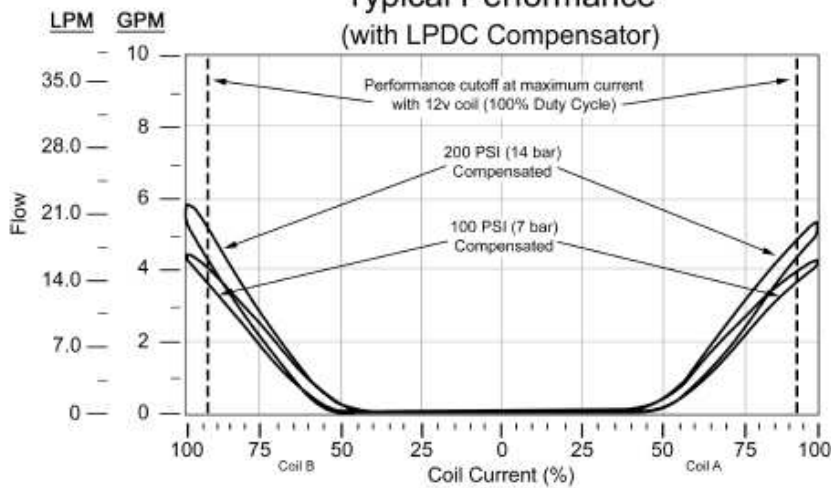
Pressure Differential (fully open)



Performance curves are derived with 4-way operation and symmetrical flow.
For valve applications where asymmetrical flow is present, the performance may vary.

FNUC-*X*

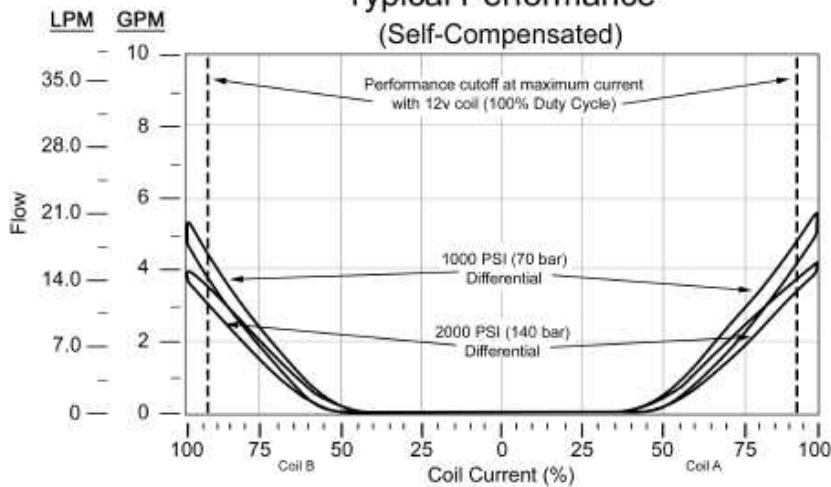
Typical Performance (with LPDC Compensator)



Performance curves are derived with 4-way operation and symmetrical flow.
For valve applications where asymmetrical flow is present, the performance may vary.

FNUC-*X*

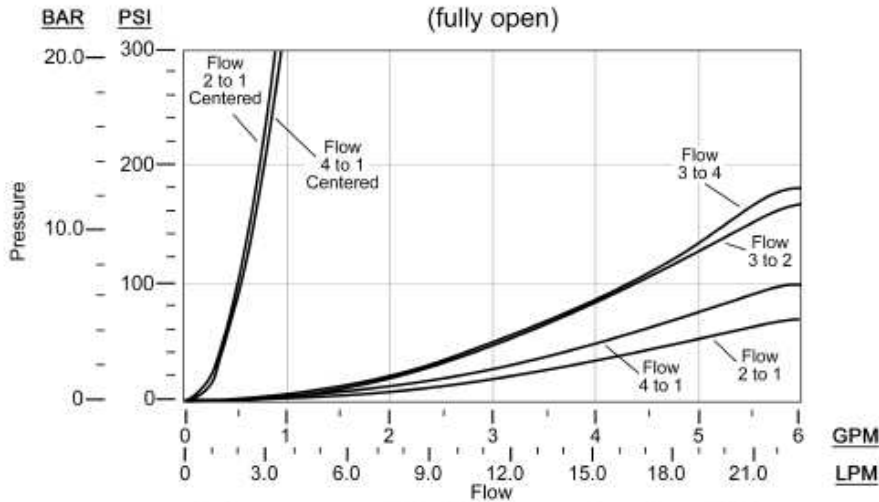
Typical Performance (Self-Compensated)



Performance curves are derived with 4-way operation and symmetrical flow.
For valve applications where asymmetrical flow is present, the performance may vary.

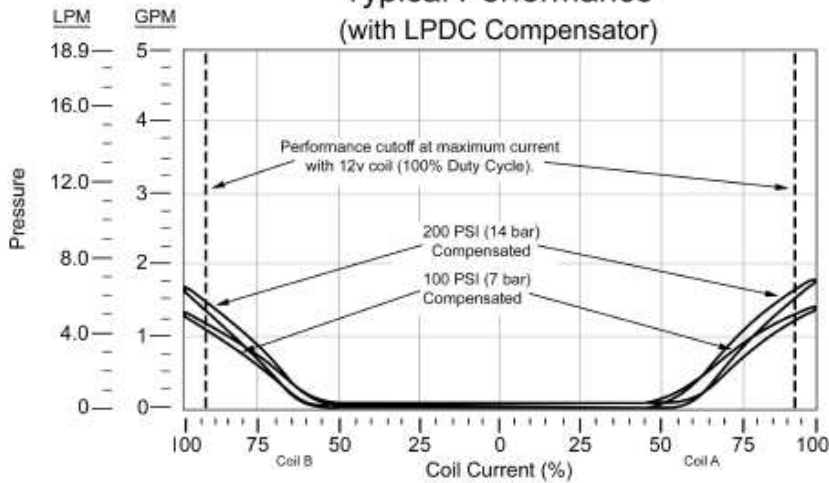
FNUC-*X*

Pressure vs. Flow (fully open)



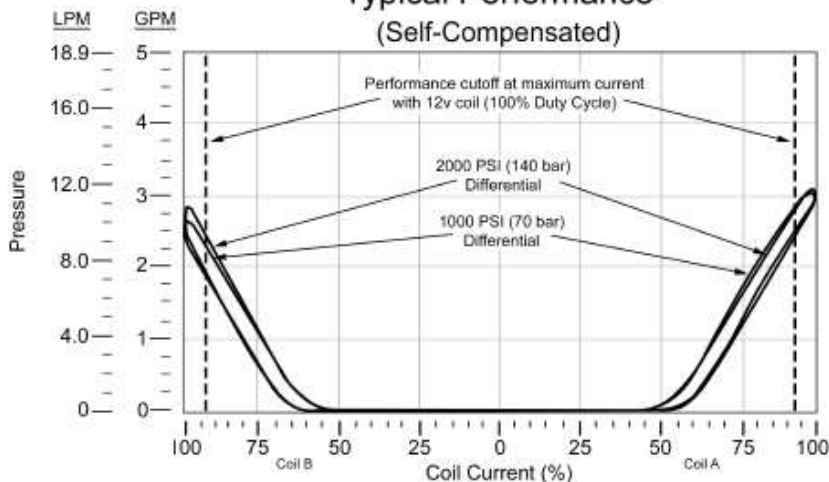
FNUC-*V*

Typical Performance (with LPDC Compensator)



FNUC-*V*

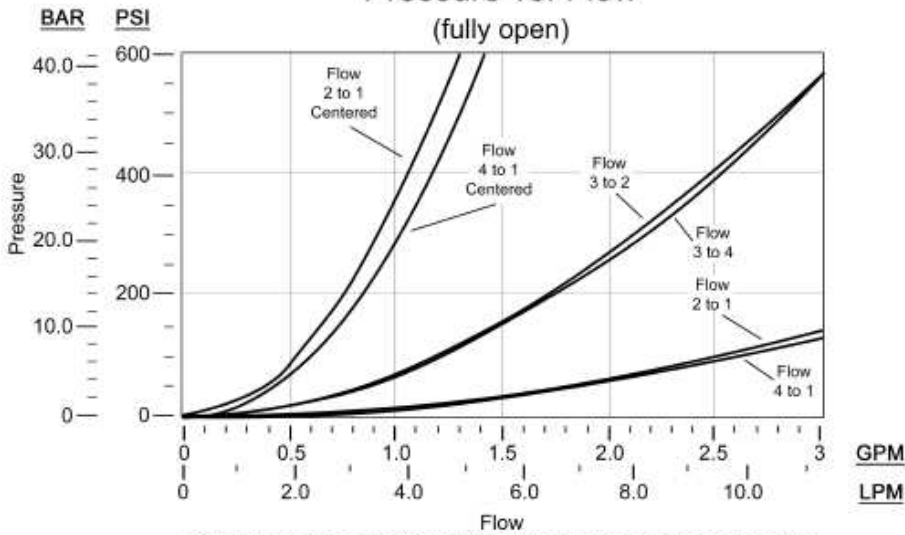
Typical Performance (Self-Compensated)



FNUC-*V*

Pressure vs. Flow

(fully open)

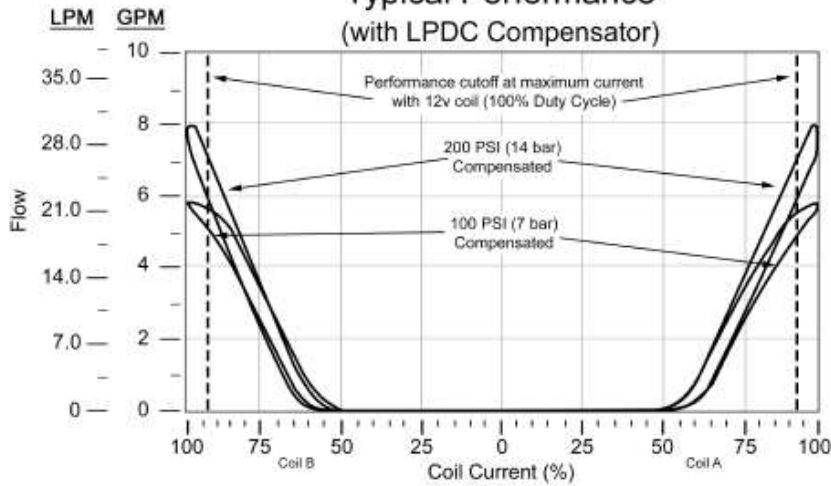


Performance curves are derived with 4-way operation and symmetrical flow.
For valve applications where asymmetrical flow is present, the performance may vary.

FNUC-*Z*

Typical Performance

(with LPDC Compensator)

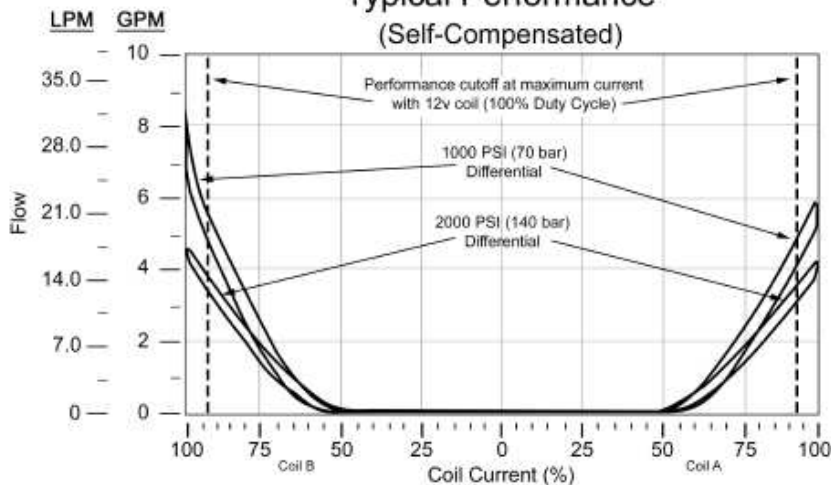


Performance curves are derived with 4-way operation and symmetrical flow.
For valve applications where asymmetrical flow is present, the performance may vary.

FNUC-*Z*

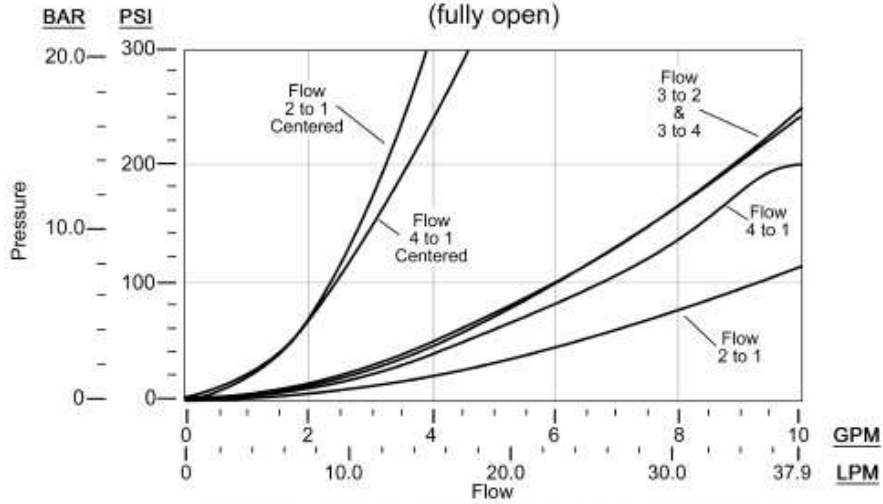
Typical Performance

(Self-Compensated)



Performance curves are derived with 4-way operation and symmetrical flow.
For valve applications where asymmetrical flow is present, the performance may vary.

FNUC-*Z* **Pressure Differential** (fully open)



Performance curves are derived with 4-way operation and symmetrical flow.
 For valve applications where asymmetrical flow is present, the performance may vary.