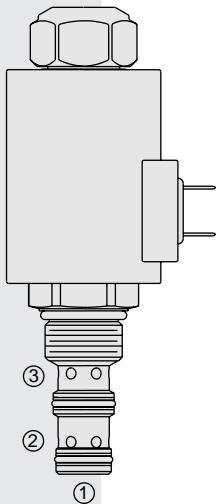


ELECTRO-PROPORTIONAL VALVES—FLOW CONTROL

ZL70-30 Proportional, Bi-Directional Flow Control,

U.S. Patent
6,167,906



DESCRIPTION

A solenoid-operated, electrically-variable, pressure-compensated, spool-type, normally closed when de-energized, proportional, bi-directional, flow control valve. An internal compensator spool provides compensated flow across the proportional orifice regardless of flow direction.

OPERATION

The **ZL70-30** provides regulated flow from port ② to port ③, or regulated flow from port ③ to port ②. Port ① should be blocked. 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 until positive stop is found.

FEATURES

- Excellent linearity and hysteresis characteristics.
- Hardened spool and cage for long life.
- Optional coil voltages and terminations.
- Efficient wet armature construction.
- Manual Override option.

RATINGS

Maximum Operating Pressure: 240 bar (3500 psi)

Regulated Flow: Range A: 0–20 lpm (0–5.3 gpm); Range B: 0–10 lpm (0–2.6 gpm)

Internal Leakage: 0.38 lpm (0.10 gpm) maximum at zero current

Electrical: 2 standard voltage ratings

Coil Voltage	Threshold Current	Max. Control Current
12 VDC	250 ± 100 mA	1400 ± 100 mA
24 VDC	125 ± 50 mA	750 ± 50 mA

Temperature: -40 to 120°C with Buna N seals

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.

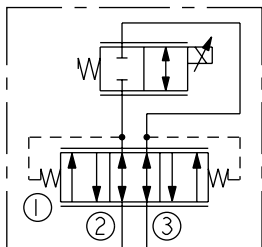
Cavity: VC10-3; See page 9.110.1

Cavity Tool: CT10-3X-XX; See page 8.600.1

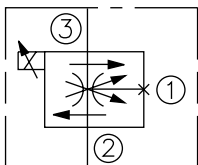
Seal Kit: SK10-3X-MM; See page 8.650.1

SYMBOLS

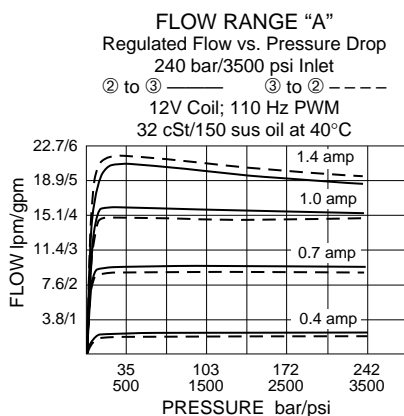
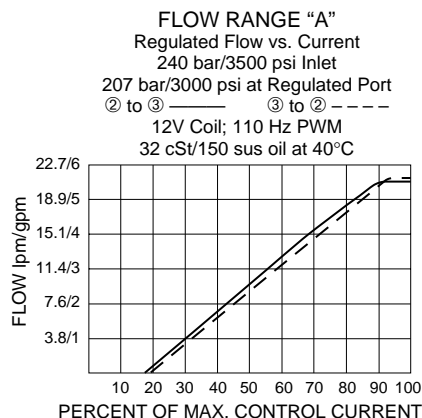
USASI/ISO:



ABBREVIATED SYMBOL:



PERFORMANCE

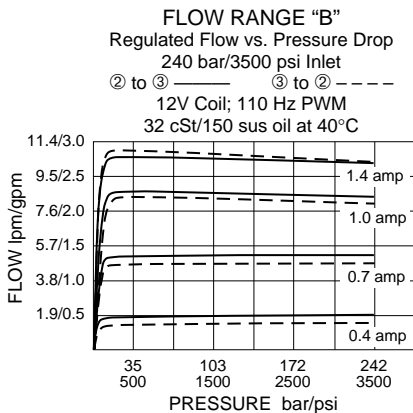
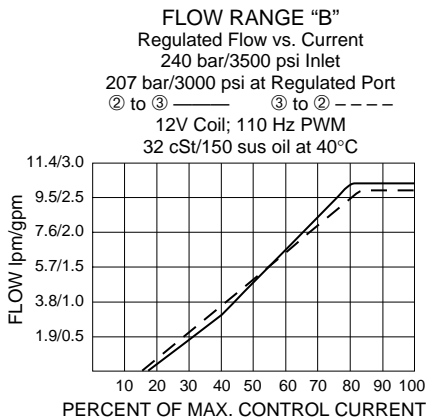


Recommended Electronic Controllers:
See page 2.001.1 or our Electronics catalog.

Normally Closed

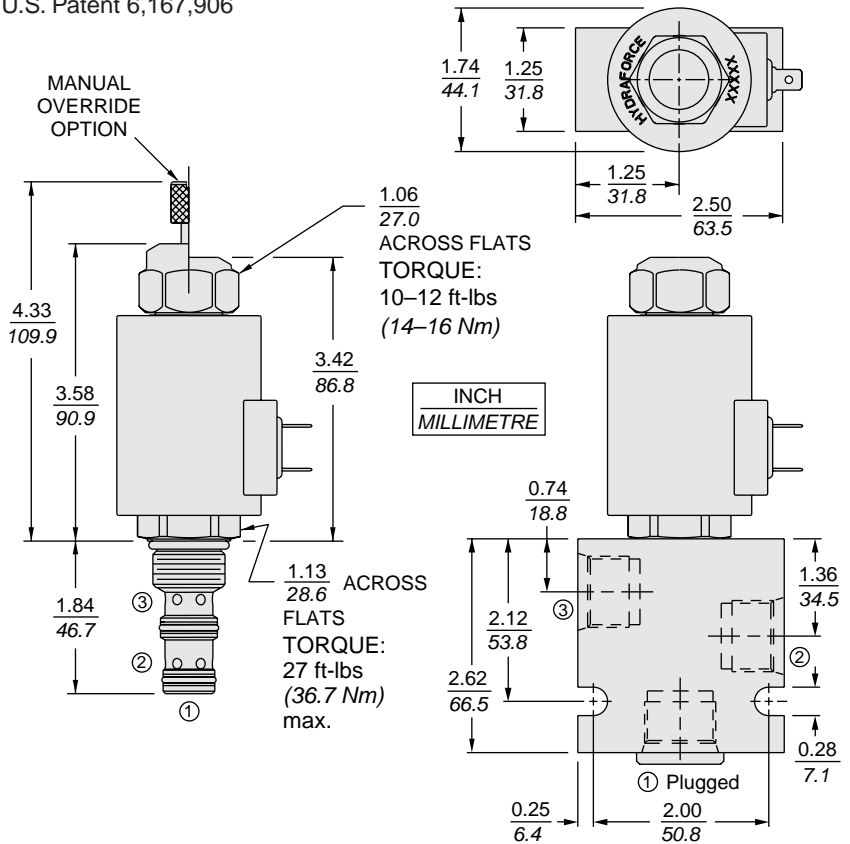
ZL70-30

PERFORMANCE (continued)



DIMENSIONS

U.S. Patent 6,167,906



MATERIALS

Cartridge: Weight: 0.32 kg. (0.7 lbs.)
Steel with hardened work surfaces.
Zinc-plated exposed surfaces.
Buna N O-rings and polyester elastomer back-ups standard.

Standard Ported Body: Weight: 0.59 kg. (1.3 lbs.)
Anodized high-strength 6061 T6 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

ZL70-30		- - -		- - -		- - -		- - -		- - -	
Range		Terminations D-Coil		Terminations E-Coil		Seals					
0–20 lpm (0–5.3 gpm)	A	DS Dual Spades		ER Deutsch DT04-2P		N Buna N (Std.)					
0–10 lpm (0–2.6 gpm)	B	DG DIN 43650		EY Metri-Pack® 150		V Fluorocarbon					
		DL/W Leads w/Weatherpak® Connectors									
Option(s)											
None (Blank)											
Manual Override	M										
Porting											
Cartridge Only	0										
SAE 6	6T										
SAE 8	8T										
SAE 10	10T										
Voltage											
0 Less Coil	0										
12 12 VDC	12										
24 24 VDC	24										

Coils with internal diode are available. Consult factory.