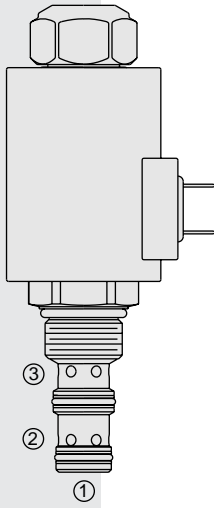


ELECTRO-PROPORTIONAL VALVES—FLOW CONTROL

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.

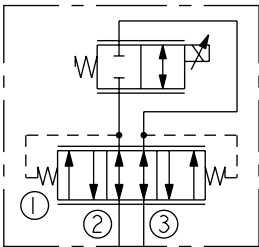
To Disengage: Turn counterclockwise approximately 6 turns until positive stop is found.

FEATURES

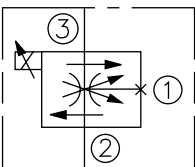
- Excellent linearity and hysteresis characteristics.
- Hardened spool and cage for long life.
- Optional coil voltages and terminations.
- Efficient wet armature construction.
- Manual Override option.

SYMBOLS

USASI/ISO:



ABBREVIATED SYMBOL:



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

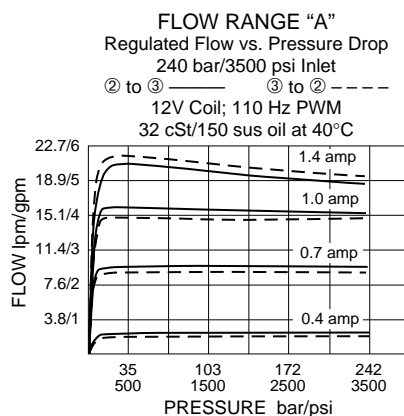
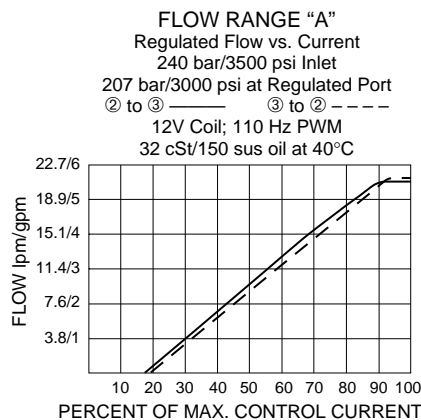
Installation: No restrictions; See page 9.020.1.

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

PERFORMANCE

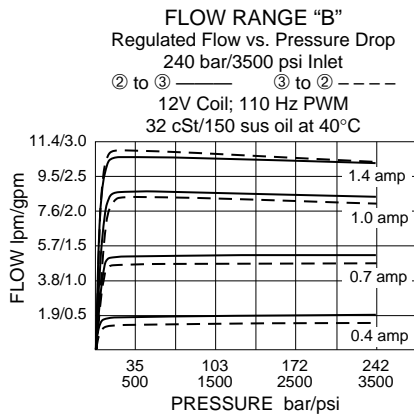
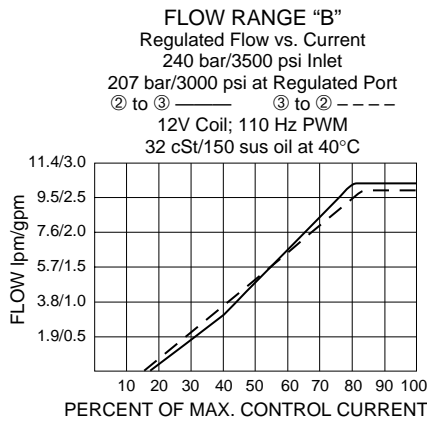


Recommended Electronic Controllers:
See page 2.001.1 or our Electronics catalog.

Normally Closed

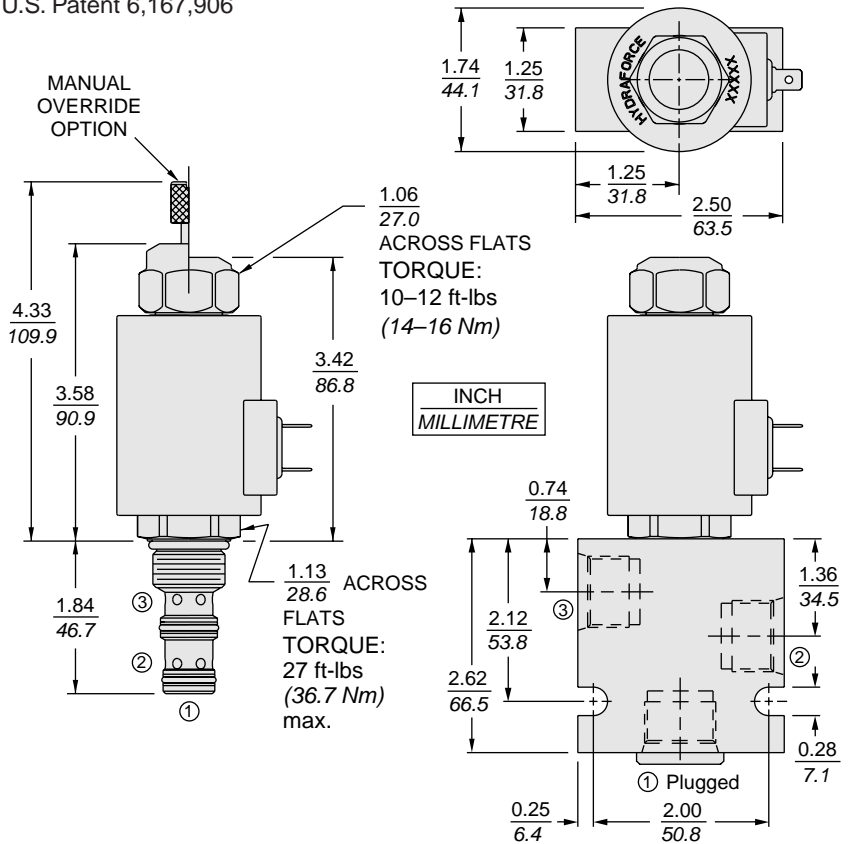
ZL70-30

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	A					
0–20 lpm (0–5.3 gpm)						
Range	B					
0–10 lpm (0–2.6 gpm)						
Option(s)						
None (Blank)						
Manual Override	M					
Porting						
Cartridge Only	0					
SAE 6	6T					
SAE 8	8T					
SAE 10	10T					
Terminations D-Coil						
DS	Dual Spades					
DG	DIN 43650					
DL	Leadwires (2)					
DL/W	Leads w/Weatherpak® Connectors					
Terminations E-Coil						
	IP69K Rated					
ER	Deutsch DT04-2P					
EY	Metri-Pack® 150					
	Coils with internal diode are available. Consult factory.					
Voltage						
0	Less Coil					
12	12 VDC					
24	24 VDC					
Seals						
N	Buna N (Std.)					
V	Fluorocarbon					