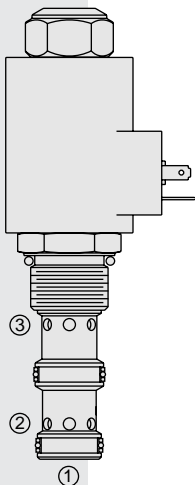


ELECTRO-PROPORTIONAL VALVES—FLOW CONTROLS

ZL72-31 Proportional, Bi-Directional Flow Control,

U.S. Patent
6,167,906



DESCRIPTION

A solenoid-operated, electrically-variable, pressure-compensated, spool-type, normally open 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 **ZL72-31** provides regulated flow in both directions: from port ② to port ③, or from port ③ to port ②. Port ① should be blocked. Regulated flow is inversely proportional to electric current applied to the solenoid.

Operation of Manual Override:

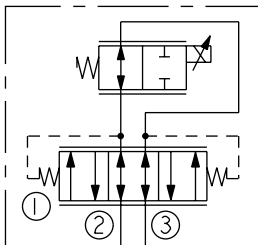
To Engage: Turn clockwise approximately 1 turn to reach start point. Continue another approximately 5 turns to full shift.

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

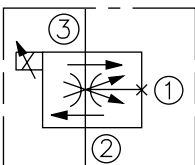
FEATURES

- Excellent linearity and hysteresis.
- Hardened spool and cage for long life.
- Efficient wet armature construction.
- Optional coil voltages and terminations.
- Cartridges voltage interchangeable.
- Unitized, molded coil design.
- Coil waterproofing standard.
- Manual override option.

SYMBOLS



ABBREVIATED SYMBOL:



RATINGS

Maximum Operating Pressure: 240 bar (3500 psi)

Regulated Flow: 0-50 lpm (0-13 gpm)

Internal Leakage: 0.38 lpm (0.10 gpm) maximum at 1.5 amp

Electrical: 2 standard voltage ratings

Coil Voltage	Threshold Current	Max. Control Current
12 VDC	150 ± 50 mA	1250 ± 100 mA
24 VDC	75 ± 25 mA	625 ± 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

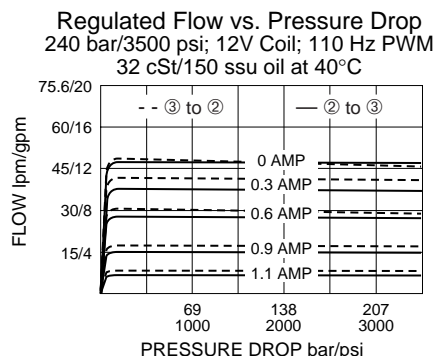
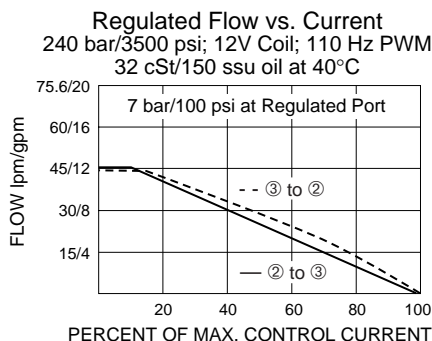
Installation: No restrictions; See page 9.020.1.

Cavity: VC12-3; See page 9.112.1

Cavity Tool: CT12-3X-XX; See page 8.600.1

Seal Kit: SK12-3X-MM; See page 8.650.1

PERFORMANCE

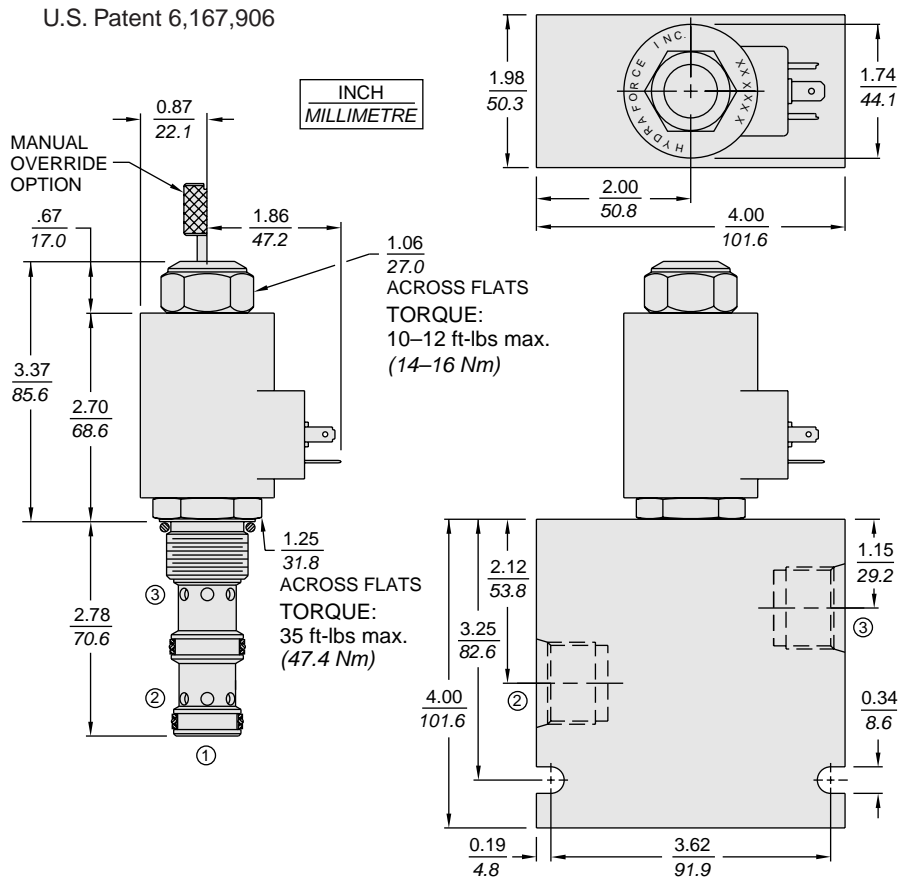


Recommended Electronic Controllers:
See page 2.001.1 or our Electronics catalog.

Normally Open

ZL72-31

DIMENSIONS



MATERIALS

Cartridge: Weight: 0.19 kg. (0.42 lbs.)
Steel with hardened work surfaces.
Zinc-plated exposed surfaces.
Buna N O-rings and polyester elastomer back-ups standard.

Standard Ported Body: Weight: 0.36 kg. (0.80 lbs.)
Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.012.1

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

ZL72-31		-	-	-	-	-
Option(s)	None (Blank)					
Manual Override	M					
Porting	Cartridge Only	0				
	SAE 6	6T				
	SAE 8	8T				
	SAE 10	10T				
Seals	Buna N (Std.)	N				
	Fluorocarbon	V				
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				