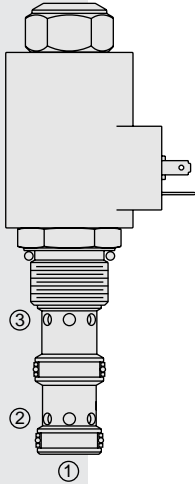


# ELECTRO-PROPORTIONAL VALVES—FLOW CONTROLS

## 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:

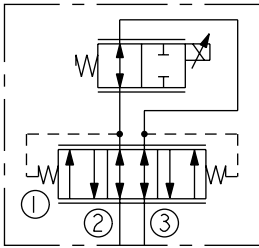
To Engage: Turn clockwise approximately 1 turn to reach start point. Continue another approximately 5 turns to full shift.

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

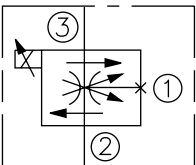
### FEATURES

- 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

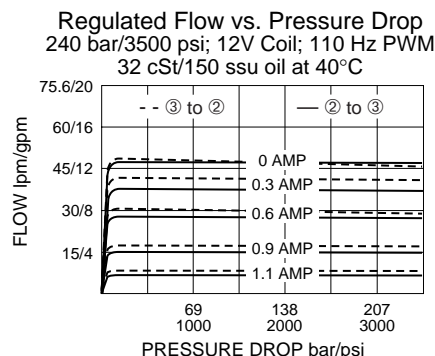
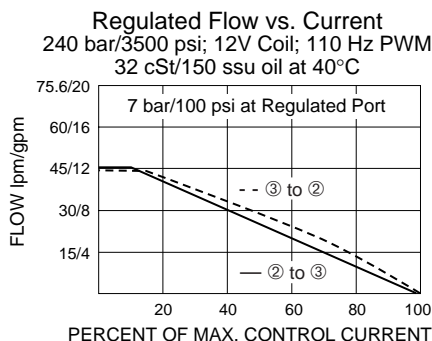
**Installation:** No restrictions; See page 9.020.1.

**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

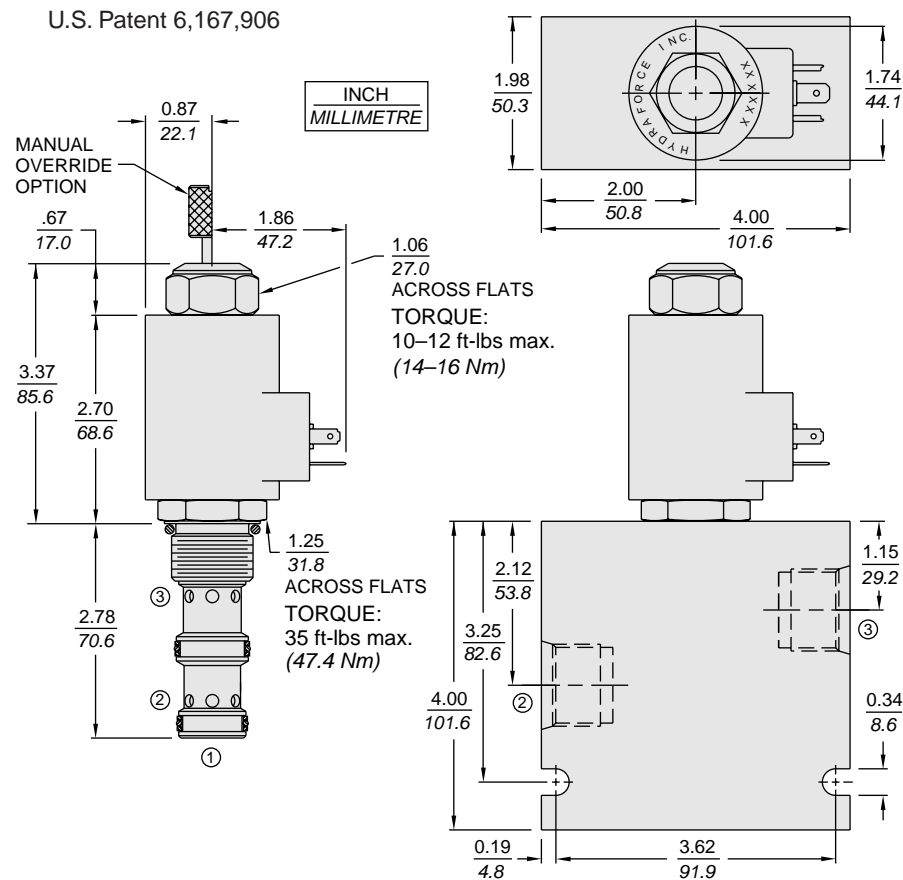


**Recommended Electronic Controllers:**  
See page 2.001.1 or our Electronics catalog.

# 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

