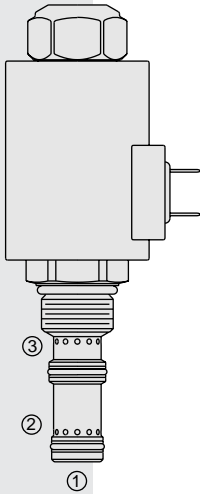


# ELECTRO-PROPORTIONAL VALVES—FLOW CONTROL

## ZL70-36 Proportional, Bi-Directional Flow Control,

U.S. Patent  
6,116,263



### DESCRIPTION

A solenoid-operated, electrically-variable, three-port, pressure-compensated, spool-type, normally closed when de-energized, proportional, bi-directional, priority-type flow control valve.

### OPERATION

The **ZL70-36** provides priority regulated flow from port ① to port ③ with bypass at port ②; or regulated flow from port ③ to port ② with port ① blocked externally, typically with a check valve (see symbol drawing). Regulated flow is proportional to electric current applied to the solenoid.

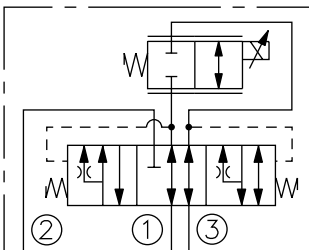
**Application Notes:** The ZL70-36 may be used for single-acting cylinder applications where lowering is provided by gravity force. The ZL 70-36 has no minimum load restrictions provided the load is enough to overcome cylinder friction and other frictions in the system. At low loads, the lowering speed can be slower than at heavier load if pressure drop is less than the compensation value of the valve.

The hydraulic circuit must include a check valve and a poppet-type solenoid valve (SV08-20 type) connected as shown on the circuit symbol and placed close to the ZL70-36 valve, if possible in the same manifold. See Application Guide.

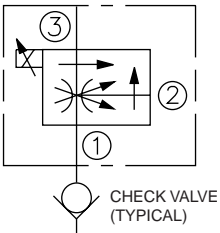
**Operation of Manual Override:** To Engage: Turn clockwise approximately 1 turn to reach start point. Continue another approximately 5 turns to full shift. To Disengage: Turn counterclockwise approximately 6 turns until positive stop is found.

### SYMBOLS

#### USAS/ISO:



#### ABBREVIATED SYMBOL:



### FEATURES

- Excellent linearity and hysteresis.
- 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: 0–19 lpm (0–5.0 gpm); Range B: 0–9.5 lpm (0–2.5 gpm)

**Input Flow:** Range A: 0–25.5 lpm (0–6.5 gpm); Range B: 0–15 lpm (0–4.0 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	300 ± 100 mA	1400 ± 100 mA
24 VDC	150 ± 50 mA	700 ± 50 mA

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

**Filtration:** See page 9.010.1

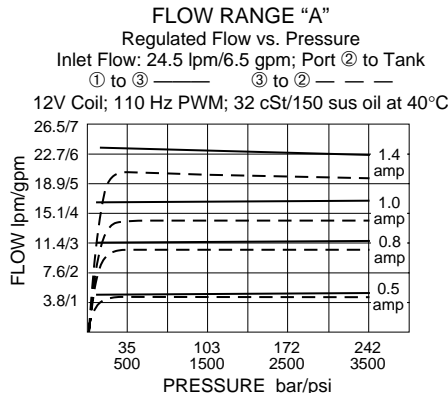
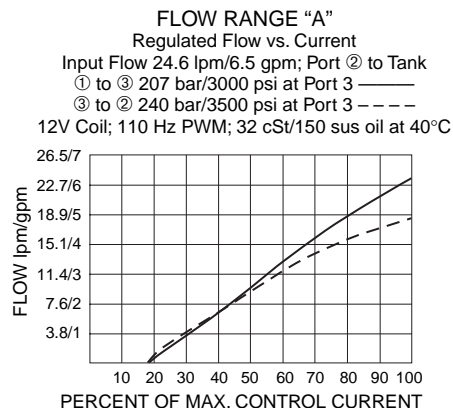
**Fluids:** Mineral-based or synthetics with lubricating properties at viscosities of 7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1

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

**Cavity:** VC10-L3; 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.

