

# Proportional Valves

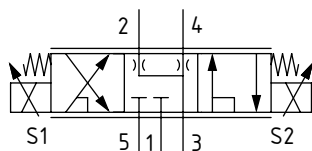
## ESVL9-10-F

Proportional Directional Valve, 5-way, 3-position, Spool Type, Non-Compensated  
**250 bar [3600 psi] • 23 l/min [6 US gpm]**

### DESCRIPTION AND OPERATION

This is a 5-way, 3-position, spool type, non-compensated proportional directional valve. In its de-energized condition, ports 5 and 1 are blocked, while ports 2 and 4 are open to port 3. Increasing the current to the bottom coil will cause the spool to move, proportionally opening flow from port 5 to 4 with return flow from port 2 to 3. Increasing the current to the top coil will proportionally open flow from port 5 to 2 with return flow from port 4 to 3. In both cases, port 5 will also be opened to port 1, which acts as the load sense port. Using this as a variable orifice in conjunction with a compensator, the valve will provide compensated flow to an actuator in both directions. For optimal performance, install with the solenoid valve below the tank oil level in the horizontal or inverted position, reducing the chance for trapped air in the valve.

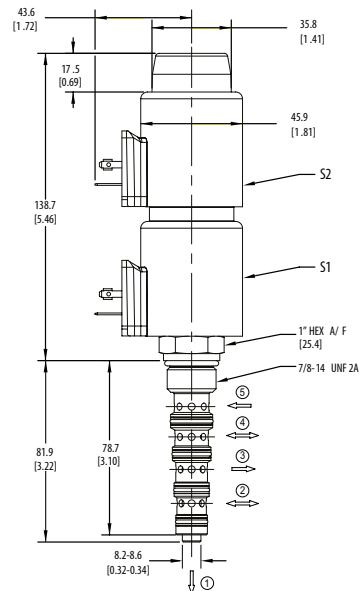
### SCHEMATIC



### DIMENSIONS

mm [in]

**Coil Nut Torque**  
 5-8 Nm [4-6 ft lbs]



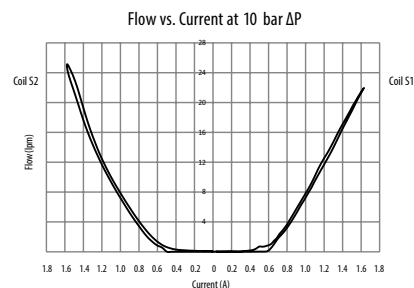
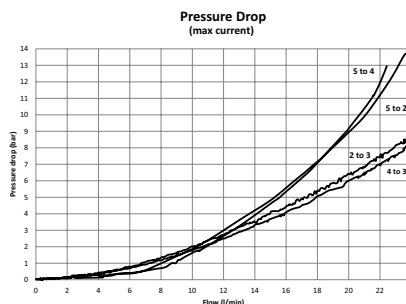
**Installation torque**  
 5-68 - 75 Nm [50 - 55 ft. lbs.]

### PERFORMANCE DATA

|                                     |   |
|-------------------------------------|---|
| <b>Rated pressure*</b>              | <b>250 bar [3600 psi]</b>   |
| <b>Rated flow@ 10 bar [145 psi]</b> | <b>23 l/min [6 US gpm]</b>  |
| <b>Leakage</b>                      | 250 ml/min (10 in <sup>3</sup> /min) max.<br>@ 210 bar [3000 psi] |
| <b>Maximum Hysteresis</b>           | 5%  |
| <b>Recommended PWM frequency</b>    | 100 Hz  |
| <b>Maximum control current</b>      | 1.6 A [12 VDC coil]<br>0.8 A [24 VDC coil]                        |
| <b>Coil Options</b>                 | L series  |
| <b>Weight</b>                       | 1.2 kg [2.65 lb]  |
| <b>Cavity</b>                       | SDC10-5   |

\*Rated pressure based on NFPA fatigue test standards (at 1 million cycles)

### PERFORMANCE CURVES



### MODEL CODE

**ESVL9 - 10 - V - F - M - S - 0 - 012D - N - L - 0 - A**

#### Seal Option

| Code            | Seal kit    |
|-----------------|-------------|
| Omit - Buna - N | 9901261-000 |
| V - Viton       | 9901262-000 |

#### Manual Override Option

**O** - No manual override  
**M** - Push and Pull

#### Housing Material

**Omit** - No Housing  
**S** - Steel

#### Housing

| Code      | Ports      | Steel       |
|-----------|------------|-------------|
| <b>0</b>  | No housing |             |
| <b>3G</b> | 3/8" BSP   | 6042921-001 |

\* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].

\* Additional housings available

#### Coil series

**Omit** - No coil  
**L** - L series, 28W

#### Connector Types

**Omit** - No coil  
**N** - Deutsch

#### Coil Voltage

**00** - No coil, nut and spacer included  
**012D** - 12V DC  
**024D** - 24V DC

#### Spare parts

Coil Nut for MO 6038813-001  
 Coil Nut w/o MO 02-148332  
 Coil Spacer 6038409-001