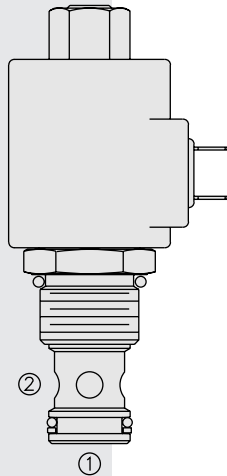


# SV12-23 Poppet, 2-Way, Normally Open



## DESCRIPTION

A solenoid-operated, two-way, normally open, poppet-type, screw-in hydraulic cartridge valve, designed to function as a load holding or blocking valve in applications requiring low internal leakage.

## OPERATION

When de-energized, the **SV12-23** allows bidirectional flow from 2 to 1.

With the sensor option, the neutral sensor will signal OFF or LOW.

When energized, the valve's poppet closes to block flow from 2 to 1. In this mode, the cartridge allows free reverse flow from 1 to 2 after overcoming the solenoid force (requires 3.4 to 10.3 bar / 50 to 150 psi). With the sensor option, the neutral sensor will signal ON or HIGH.

**Operation of Manual Override Option:** To override, push and hold override button.

## FEATURES

- Continuous-duty rated solenoid.
- Hardened seat for long life and low leakage.
- Optional coil voltages and terminations.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Optional waterproof E-Coils rated up to IP69K.
- Unitized, molded coil design.
- Manual override option.
- Cost effective cavity.

## RATINGS

**Operating Pressure:** 240 bar (3500 psi)

**Flow:** Up to 114 lpm (30 gpm); see performance chart

**Internal Leakage:** 0.15 cc/minute (3 drops/minute) max. at 240 bar (3500 psi)

**Temperature:** with standard Buna N seals: -40 to 100°C (-40° to 212°F);  
with Fluorocarbon seals: -26 to 204°C (-15°F to 400°F)

**Coil Duty Rating:** Continuous from 85% to 115% of nominal voltage

**Response Time:** First indication of change of state with 100% voltage supplied at 80% of nominal flow rating: Energized: 80 msec.; De-energized: 30 msec.

Response Time with Sensor: 158 ms pull-in, 57 ms drop-out

**Initial Coil Current Draw at 20°C:** Standard Coil: 1.67 amps at 12 VDC;  
0.18 amps at 115 VAC (full wave rectified).

E-Coil: 1.7 amps at 12 VDC; 0.85 amps at 24 VDC

**Minimum Pull-in Voltage:** 85% of nominal at 240 bar (3500 psi)

**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:** VC12-2; See page 9.112.1

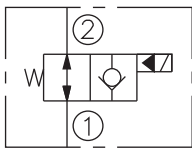
**Cavity Tool:** CT12-2XX; See page 8.600.1

**Seal Kit:** SK12-2X-T; See page 8.650.1

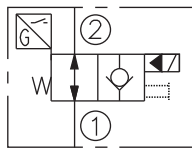
**Coil Nut:** Part No. 7004420

## SYMBOLS

ISO:

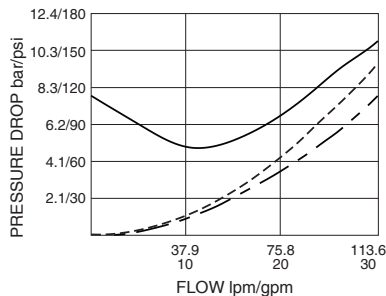


with Sensor:

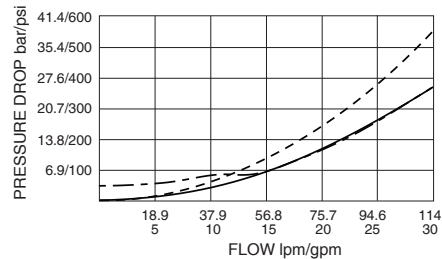


## PERFORMANCE (Cartridge Only)

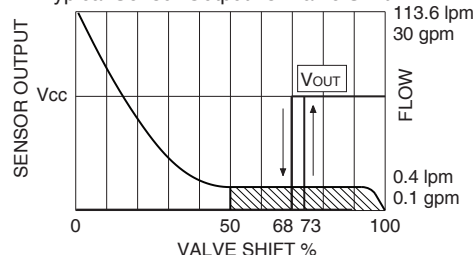
Port 2 to 1 De-energized - - - - -  
Port 1 to 2 De-energized - - - - -  
Port 1 to 2 Energized - - - - -  
32 cSt/150 sus oil at 40°C



SV12-23 with Sensor  
Port 2 to 1 Energized - - - - -  
Port 1 to 2 Energized - - - - -  
Port 1 to 2 De-energized - - - - -  
32 cSt/150 sus oil at 40°C

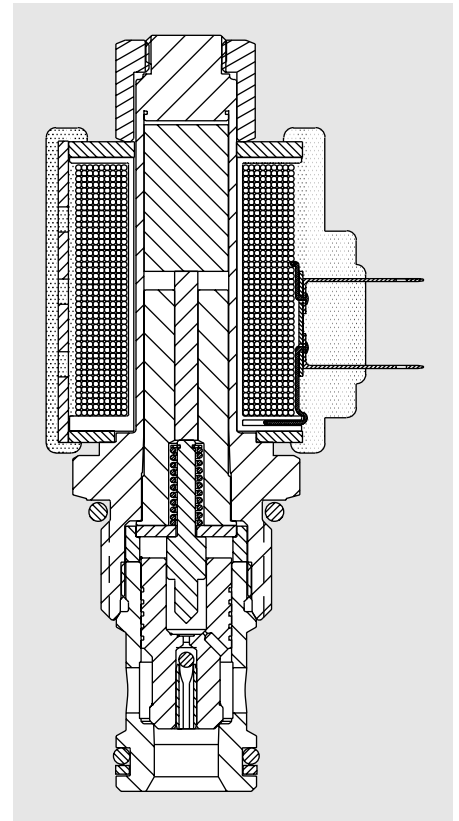
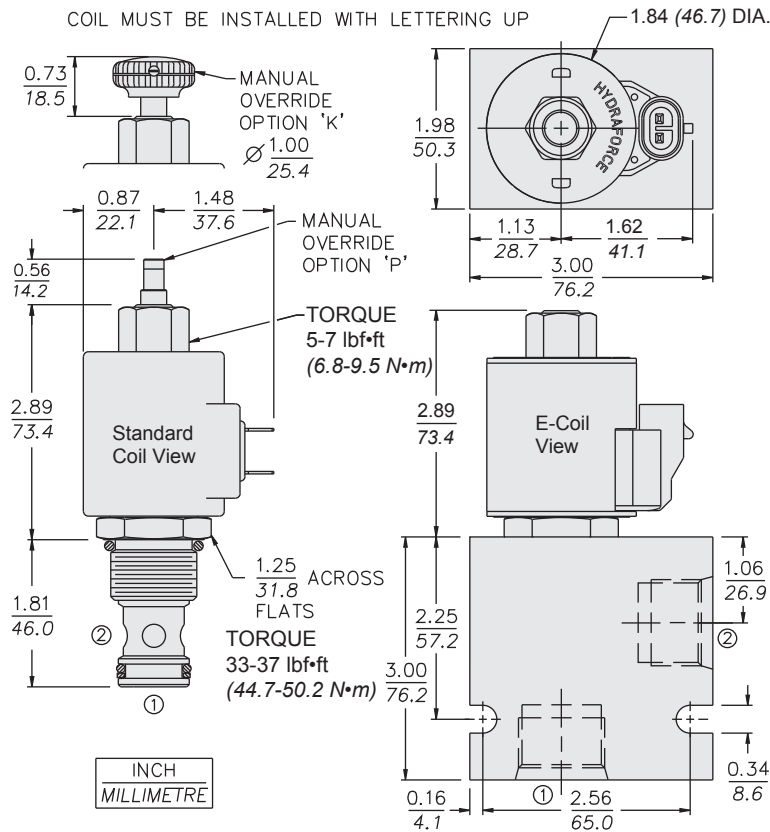


Typical Sensor Output vs. Valve Shift



Hatched Area: Overlapping Stroke, Leakage Flow

## DIMENSIONS



Dimensions will differ significantly with Sensor Option; see page 3.010.1.

## MATERIALS

**Cartridge:** Weight: 0.25 kg. (0.55 lbs.); Weight with Sensor option: 0.61 kg. (1.35 lbs.); Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and polyester elastomer back-up standard.

**Standard Ported Body:** Weight: 0.57kg. (1.25 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.

**D-Coil:** Weight: 0.27 kg. (0.60 lbs.); Unitized thermoplastic encapsulated, Class H high temperature magnetwire. See page 3.200.1.

**E-Coil:** Weight: 0.41 kg. (0.9 lbs.); Fully encapsulated with rugged external metal shell. Rated up to IP69K with integral connectors. See page 3.400.1.

## TO ORDER

**SV12-(P)23(A)** - - - - - Sensor Option: See page 3.010.1

<p><b>Position Indicator</b></p> <p>None (Blank)</p> <p>Switch <b>P</b></p> <p>Restricted Flow <b>A</b></p> <p>with sensor, valve is rated 3000 psi (207 bar)</p>	<p><b>Option</b></p> <p>None (Blank)</p> <p>Manual Override <b>P</b></p> <p>Manual Override <b>K</b></p> <p>For Manual Override options see page 1.001.1</p>	<p><b>Porting</b></p> <p>Cartridge Only <b>0</b></p> <p>SAE 12 <b>12T</b></p>	<p><b>Voltage Std. Coil</b></p> <p><b>0</b> Less Coil**</p> <p><b>10</b> 10 VDC<sup>†</sup></p> <p><b>12</b> 12 VDC</p> <p><b>24</b> 24 VDC</p> <p><b>36</b> 36 VDC</p> <p><b>48</b> 48 VDC</p> <p><b>24</b> 24 VAC</p> <p><b>115</b> 115 VAC</p> <p><b>230</b> 230 VAC</p> <p>**Includes Coil Nut</p> <p><sup>†</sup> DS, DW or DL terminations only</p> <p><b>E-Coils:</b> 10,12,20 or 24 VDC only.</p>	<p><b>Sensor Type</b></p> <p>(Blank) None</p> <p><b>3</b> Dual Output, N.C./N.O.</p> <p><b>Sensor/Connector</b></p> <p>(Blank) None</p> <p><b>N</b> Neutral Sense/DT04-4P</p> <p><b>M</b> Neutral Sense/M12-4P</p> <p><b>Mating Connectors:</b></p> <p>DT06-4S: Part No. 4001953</p> <p>M12-4S: available at <a href="http://www.turck.com">www.turck.com</a> or <a href="http://www.binder-usa.com">www.binder-usa.com</a></p>	<p><b>Coil Termination</b></p> <p>Deutsch DT04-2P <b>ER</b> (IP69K) <b>DR</b> (IP65)</p> <p>Metri-Pack® 150 <b>EY</b> (IP69K) <b>DY</b> (IP65)</p> <p>Dual Lead Wires <b>EL</b> (IP69K) <b>DL</b> (IP65)</p> <p>Amp Jr. Timer <b>EJ</b> (IP67) —</p> <p>DIN 43650 <b>EG</b> (IP65) <b>DG</b> (IP65)</p> <p>Dual Spades — <b>DS</b> (IP65)</p>
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**Seals**

**N** Buna N (Std.)

**V** Fluorocarbon

For Coils with Zener Diode, add "Z" to option code. For example: "ER/Z". Not available on all models. See coil option info. on pages 3.200.1 & 3.400.1