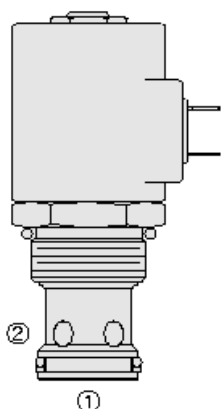




Overview



Description

A solenoid-operated, 2 port, normally closed, poppet-type, screw-in hydraulic cartridge valve, designed to function as a load-holding or blocking valve in applications requiring low internal leakage

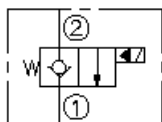
Operation

When de-energized, the SV16-20X acts as a check valve, allowing flow to pass from port 1 to port 2, while blocking flow in the reverse direction. When energized, the poppet lifts to open the port 2 to port 1 flow path. In this mode, flow from port 1 to port 2 is severely restricted

Features

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

Symbol



Ratings

Pressure Ratings

| | |
|-----------------|---------------------|
| Pressure rating | 241 bar (3500 psi) |
| Proof pressure | 344 bar (5000 psi) |
| Burst pressure | 779 bar (11300 psi) |

Flow Ratings

| | | |
|--------------------------|--------------------|--|
| Flow rating | 227.4 lpm (60 gpm) | - Note: Based on |
| | 34.4 bar (500 psi) | - Note: Pressure drop, see performance graphs |
| Maximum internal leakage | 5 drops/min | - Note: At rated pressure |
| Hysteresis per cent | 5 % | - Note: Maximum up to 60% of imax |
| | 10 % | - Note: Maximum from 60% of imax up to imax |

Temperature Ratings

| | | |
|-----------------------------|-------------------------------|--|
| Operating fluid temperature | -40 to 100 °C (-40 to 212 °F) | - Note: With buna N seals |
| | -26 to 204 °C (-15 to 400 °F) | - Note: With fluorocarbon seals |
| | -54 to 107 °C (-65 to 225 °F) | - Note: With polyurethane seals |
| Storage temperature | -40 to 70 °C (-40 to 160 °F) | |
| Ambient temperature | -40 to 70 °C (-40 to 160 °F) | |

Other Ratings

| | |
|----------------------|--|
| Corrosion protection | 960 hr salt spray per ASTM b117 (gsv16-20) |
|----------------------|--|

Operating Parameters

| | |
|---------------------------------------|--|
| Fluids | Mineral based or synthetic hydraulic fluid with lubricating properties |
| Fluid viscosity range | 7.4 to 420 cSt |
| Maximum operating contamination level | 20/18/14 per ISO 4406 |

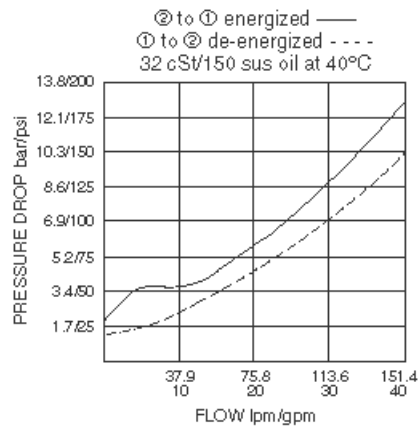
Properties

| | |
|------------------------------|---|
| Unit weight | 0.32 kg (0.71 lb) |
| Internal wetted surface area | 221 cm ² (34.2 in ²) |

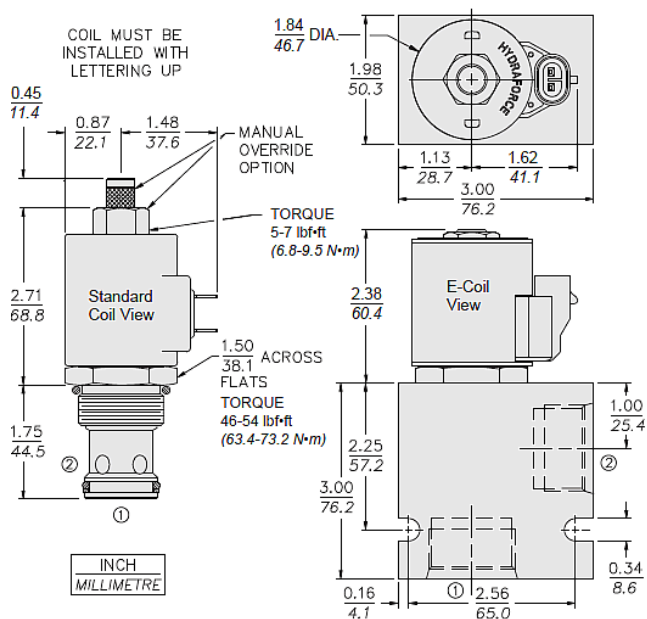
Electrical Parameters

| | |
|-------------------------|--|
| Valve inductance | 166 mH |
| Maximum control current | 1.2 A - Note: For coil 12 Vdc |
| Minimum control current | - Note: Less than threshold current |
| Threshold current | 0.4 A - Note: For coil 12 Vdc |
| Dither PWM frequency | 100 to 400 Hz |

Performance



Dimensions



Materials

Materials

Cartridge: Weight: 0.31 kg (0.69 lb); Steel with hardened work surfaces. Zinc-plated exposed surfaces; Buna N O-rings and polyester elastomer back-up standard.

Standard Ported Body: Weight: 0.57 kg (1.25 lb); Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi); Ductile iron bodies available; dimensions may differ.

Standard D-Coil: Weight each: 0.27 kg (0.60 lb); Unitized thermoplastic encapsulated, Class H high temperature magnet wire.

E-Coil: Weight: 0.41 kg (0.9 lb); Perfect wound, fully encapsulated with rugged external metal shell; Rated up to IP69K with integral connectors.



Installation Specifications

| | |
|-------------------------------|-----------------------------------|
| Cavity | VC16-2 |
| Cartridge installation torque | 62.4 to 73.2 N-m (46 to 54 ft-lb) |
| Maximum allowable torque | 169 N-m (125 ft-lb) |
| Orientation restriction | None |

Accessories

| | | |
|----------|-----------|--------------------------------|
| Seal kit | SK16-2X-T | - Note: X = seal option |
| Housings | | |
| Coils | | |

Order Code

| POSITION | CODE | DESCRIPTION |
|----------|---------|---|
| | | SV16-20E-H-J-L |
| E | | Manual Override |
| E | BLANK | NONE |
| E | J | Momentary Pull Override, #10-32 threads |
| E | M | Two Position Override, Red Knurled Knob |
| E | Y | Momentary Pull Override, Red Knurled Knob |
| H | | Line Body |
| H | 0 | No Body |
| H | 12T | Aluminum SAE 12 |
| H | 16T | Aluminum SAE 16 |
| H | 12TD | Ductile Iron SAE 12 |
| H | 16TD | Ductile Iron SAE 16 |
| H | 6B | Aluminum BSPP 3/4" (6) |
| H | 8B | Aluminum BSPP 1" (8) |
| H | 8BD | Ductile Iron BSPP 1" (8) |
| J | | Seal |
| J | N | Buna-N |
| J | V | Fluorocarbon |
| J | P | Polyurethane |
| J | U | PPDI Urethane |
| L | | Coil |
| L | 0 | No Coil |
| L | 10DG | 10 VDC, D-Coil, DIN 43650 |
| L | 10DL | 10 VDC, D-Coil, Dual Lead Wires |
| L | 10DR/D | 10 VDC, D-Coil, Deutsch with Diode |
| L | 10DS | 10 VDC, D-Coil, Dual Spade |
| L | 10EL | 10 VDC, E-Coil, Dual Lead Wires |
| L | 10ER | 10 VDC, E-Coil, Deutsch |
| L | 10ER/Z | 10 VDC, E-Coil, Deutsch with Zener Diode |
| L | 12DG | 12 VDC, D-Coil, DIN 43650 |
| L | 12DL | 12 VDC, D-Coil, Dual Lead Wires, 18 inches long |
| L | 12DL/36 | 12 VDC, D-Coil, Dual Lead Wires, 36 inches long |
| L | 12DL/W | 12 VDC, D-Coil, Dual Lead Wires with Weatherpak |



| POSITION | CODE | DESCRIPTION |
|----------|----------|---|
| L | 12DL/W/D | 12 VDC, D-Coil, Dual Lead Wires with Weatherpak with Diode |
| L | 12DR | 12 VDC, D-Coil, Deutsch |
| L | 12DR/D | 12 VDC, D-Coil, Deutsch with Diode |
| L | 12DR/Z | 12 VDC, D-Coil, Deutsch with Zener Diode |
| L | 12DS | 12 VDC, D-Coil, Dual Spade |
| L | 12EG | 12 VDC, E-Coil, DIN 43650 |
| L | 12EJ | 12 VDC, E-Coil, AMP Jr. |
| L | 12EL | 12 VDC, E-Coil, Dual Lead Wires, 18 inches long |
| L | 12EL/36 | 12 VDC, E-Coil, Dual Lead Wires, 36 inches long |
| L | 12EL/W/Z | 12 VDC, E-Coil, Dual Lead Wires with WeatherPak and Zener Diode |
| L | 12EL/Z | 12 VDC, E-Coil, Dual Lead Wires with Zener Diode |
| L | 12ER | 12 VDC, E-Coil, Deutsch |
| L | 12ER/Z | 12 VDC, E-Coil, Deutsch with Zener Diode |
| L | 12EY | 12 VDC, E-Coil, Metri-Pack 150 |
| L | 12EY/Z | 12 VDC, E-Coil, Metri-Pack 150 with Zener Diode |
| L | 20DR/D | 20 VDC, D-Coil, Deutsch with Diode |
| L | 20DS | 20 VDC, D-Coil, Dual Spade |
| L | 20ER | 20 VDC, E-Coil, Deutsch |
| L | 24AG | 24 VDC, D-Coil, DIN 43650 |
| L | 24AP | 24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| L | 24DG | 24 VDC, D-Coil, DIN 43650 |
| L | 24DL | 24 VDC, D-Coil, Dual Lead Wires |
| L | 24DL/W | 24 VDC, D-Coil, Dual Lead Wires with Weatherpak |
| L | 24DL/W/D | 24 VDC, D-Coil, Dual Lead Wires with Weatherpak with Diode |
| L | 24DP | 24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| L | 24DR | 24 VDC, D-Coil, Deutsch |
| L | 24DR/D | 24 VDC, D-Coil, Deutsch with Diode |
| L | 24DS | 24 VDC, D-Coil, Dual Spade |
| L | 24EG | 24 VDC, E-Coil, DIN 43650 |
| L | 24EJ | 24 VDC, E-Coil, AMP Jr. |
| L | 24EL | 24 VDC, E-Coil, Dual Lead Wires, 18 inches long |
| L | 24EL/36 | 24 VDC, E-Coil, Dual Lead Wires, 36 inches long |
| L | 24EL/W/Z | 24 VDC, E-Coil, Dual Lead Wires with WeatherPak and Zener Diode |
| L | 24ER | 24 VDC, E-Coil, Deutsch |
| L | 24ER/Z | 24 VDC, E-Coil, Deutsch with Zener Diode |
| L | 24EY | 24 VDC, E-Coil, Metri-Pack 150 |
| L | 24EY/Z | 24 VDC, E-Coil, Metri-Pack 150 with Zener Diode |
| L | 36DS | 36 VDC, D-Coil, Dual Spade |
| L | 115AG | 115 VAC, D-Coil, DIN 43650 |
| L | 115AP | 115 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| L | 230AG | 230 VAC, D-Coil, DIN 43650 |
| L | 230AP | 230 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires |

