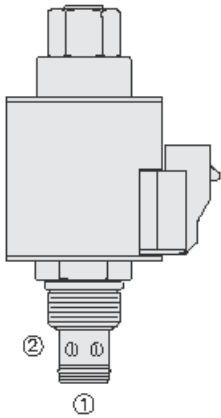




Overview



Description

A solenoid-operated, 2-port, normally closed, direct-acting, bi-directional spool-type, proportional, screw-in hydraulic cartridge valve

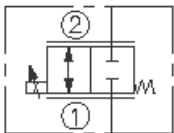
Operation

When energized, the sp10-24xx act as a bi-directional metering valve. When de-energized, flow in both directions is blocked

Features

- Continuous-duty rated coil.
- Efficient wet-armature construction.
- Optional waterproof E-Coils rated up to IP69K.
- Manual override option.
- Industry common cavity.

Symbol



Ratings

Pressure Ratings

Pressure rating 207 bar (3000 psi)

Flow Ratings

Maximum internal leakage 20 in³/min - **Note:** At 207 bar (3000 psi)

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 90 °C (-40 to 194 °F) | |

Operating Parameters

Operating viscosity 10 to 420 cSt - **Note:** Operating temperature must not exceed limits of fluid viscosity or limits of seal storage temperature

Properties

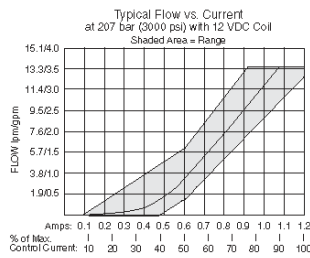
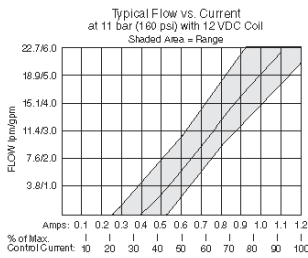
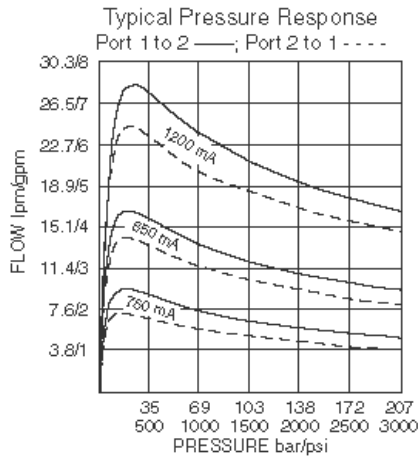
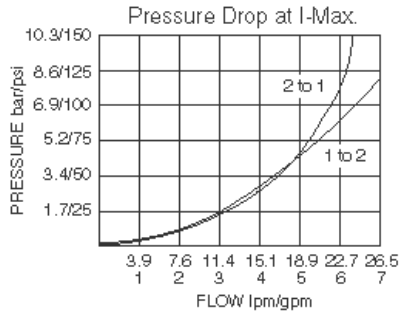
| | | |
|------------------------------|--|---|
| Materials | Steel with hardened work surfaces zinc-plated exposed surfaces | |
| Unit weight | 0.25 kg (0.56 lb) | - Note: Cartridge only: blank, P |
| | 0.26 kg (0.58 lb) | - Note: Cartridge only: k |
| | 0.68 kg (1.49 lb) | - Note: With e-coil: blank, P |
| | 0.69 kg (1.51 lb) | - Note: With e-coil:k |
| Internal wetted surface area | 152.9 cm ² (23.7 in ²) | - Note: Blank |
| | 172.9 cm ² (26.8 in ²) | - Note: P k |

Electrical Parameters

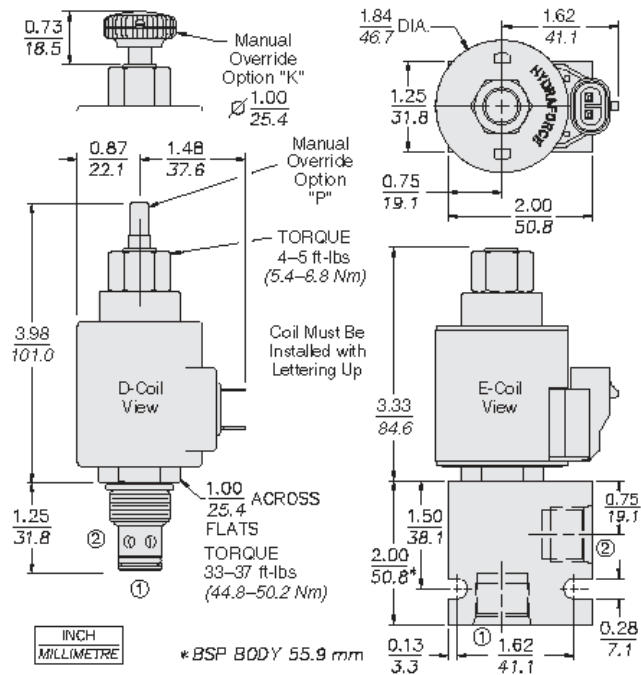
Minimum operating PWM dither frequency 70 Hz



Performance



Dimensions





Materials

Materials

Cartridge: Weight: 0.17 kg (0.37 lb); Steel with hardened work surfaces. Zinc-plated exposed surfaces; Buna N O-rings and back-ups standard.

Standard Ported Body: Weight: 0.16 kg (0.35 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 | VC10-2 |
| Cartridge installation torque | 44.8 to 50.2 N-m (33 to 37 ft-lb) 68 N-m (50 ft-lb) |
| Coil nut torque | 5.4 to 6.8 N-m (4 to 5 ft-lb) |
| Orientation restriction | None |

Accessories

| | |
|----------|-----------|
| Seal kit | SK10-2X-M |
| Housings | |
| Coils | |

Order Code

| POSITION | CODE | DESCRIPTION |
|----------|-------|---------------------------------|
| | | SP10-24EG-H-J-L |
| E | | Manual Override |
| E | BLANK | NONE |
| E | K | Momentary Push Override, Knob |
| E | P | Momentary Push Override, Button |
| G | | Screen |
| G | BLANK | NONE |
| G | S | 100 Mesh Screen |
| H | | Line Body |
| H | 0 | No Body |
| H | 6T | Aluminum SAE 6 |
| H | 8T | Aluminum SAE 8 |
| H | 6TD | Ductile Iron SAE 6 |
| H | 8TD | Ductile Iron SAE 8 |
| H | 2B | Aluminum BSPP 1/4" (2) |
| H | 3B | Aluminum BSPP 3/8" (3) |
| H | 4B | Aluminum BSPP 1/2" (4) |
| H | 4BD | Ductile Iron BSPP 1/2" (4) |
| J | | Seal |
| J | N | Buna-N |
| J | V | Fluorocarbon |
| J | P | Polyurethane |
| J | U | PPDI Urethane |
| L | | Coil |



| POSITION | CODE | DESCRIPTION |
|----------|---------|--|
| L | 0 | No Coil |
| L | 10DG | 10 VDC, D-Coil, DIN 43650 |
| L | 10DL | 10 VDC, D-Coil, Dual Lead Wires |
| 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 | 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 |
| L | 12DR | 12 VDC, D-Coil, Deutsch |
| 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 | 12ER | 12 VDC, E-Coil, Deutsch |
| L | 12EY | 12 VDC, E-Coil, Metri-Pack 150 |
| 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 | 24DP | 24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| L | 24DR | 24 VDC, D-Coil, Deutsch |
| 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 | 24ER | 24 VDC, E-Coil, Deutsch |
| L | 24EY | 24 VDC, E-Coil, Metri-Pack 150 |
| L | 36DS | 36 VDC, D-Coil, Dual Spade |

