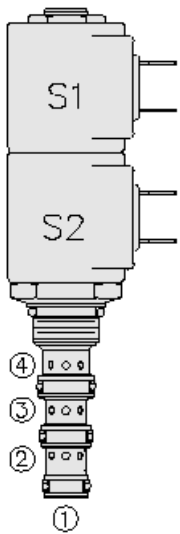




## Overview



### Description

DESCRIPTION: A solenoid operated, direct acting, 3 position, 4-way, motor spool, proportional directional control. It is a screw in hydraulic cartridge valve for use with general purpose hydraulic fluids. Manual override feature is available as an option.

### Operation

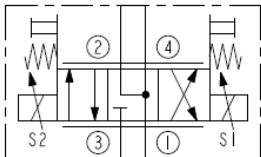
When de-energized, the SP08-47DX blocks flow to port 3, while allowing flow from port 2 to port 1 and port 4 to port 1. When coil #1 is energized, flow is allowed from port 3 to port 4, and from port 2 to port 1. When coil #2 is energized, flow is allowed from port 3 to port 2, and from port 4 to port 1.

**Note:** While port 1 may be fully pressurized, it is not intended for use as the valve's inlet.

### Features

- Continuous-duty rated solenoid.
- Hardened precision spool and cage for long life.
- Optional coil voltages and terminations.
- Manual override option.
- Optional waterproof E-Coils rated up to IP69K.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry-common cavity.

### Symbol



## Ratings

### Pressure Ratings

|                 |                    |   |
|-----------------|--------------------|---|
| Pressure rating | 241 bar (3500 psi) | - <b>Note:</b> Per NFPA T2.6.1 R2-2000 using 99.9 assurance and 90% verification levels |
| Proof pressure  | 345 bar (5000 psi) | - <b>Note:</b> For SP08-47D only  |
| Burst pressure  | 655 bar (9500 psi) | - <b>Note:</b> For SP08-47D only  |

### Flow Ratings

|                          |                                      |  |
|--------------------------|--------------------------------------|--|
| Flow rating              | See performance graphs               |  |
| Maximum internal leakage | 164 ml/min (10 in <sup>3</sup> /min) | - <b>Note:</b> At 207 bar (3000 psi)                 |
| Hysteresis               | Less than 0.8 lpm (0.2 gpm)          | - <b>Note:</b> From threshold to max control current |

### Temperature Ratings

|                             |                               |  |
|-----------------------------|-------------------------------|--|
| Operating fluid temperature | -40 to 100 °C (-40 to 212 °F) | - <b>Note:</b> With Buna N seals       |
|                             | -26 to 204 °C (-15 to 400 °F) | - <b>Note:</b> With fluorocarbon seals |
|                             | -54 to 107 °C (-65 to 225 °F) | - <b>Note:</b> With polyurethane seals |
| Storage temperature         | -40 to 70 °C (-40 to 158 °F)  |  |
| Ambient temperature         | -40 to 70 °C (-40 to 158 °F)  |  |

### Other Ratings

|                      |                                 |
|----------------------|---------------------------------|
| Corrosion protection | 960 hr salt spray per ASTM B117 |
|----------------------|---------------------------------|

## Operating parameters

|                       |   |
|-----------------------|---|
| Fluids                | Mineral based or synthetic hydraulic fluid with lubricating properties. |
| Fluid viscosity range | 7.4 to 420 cSt  |



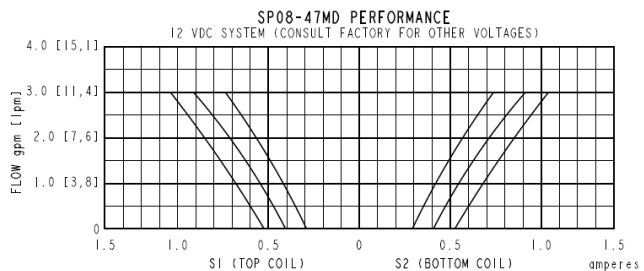
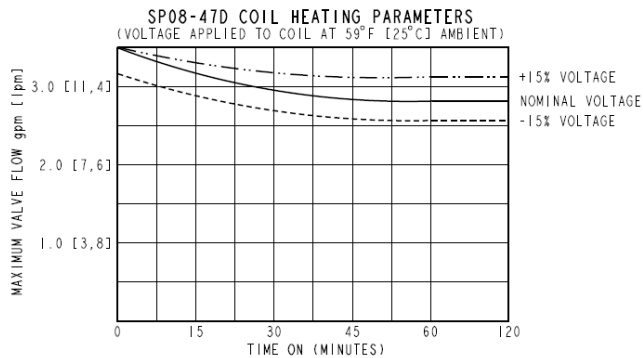
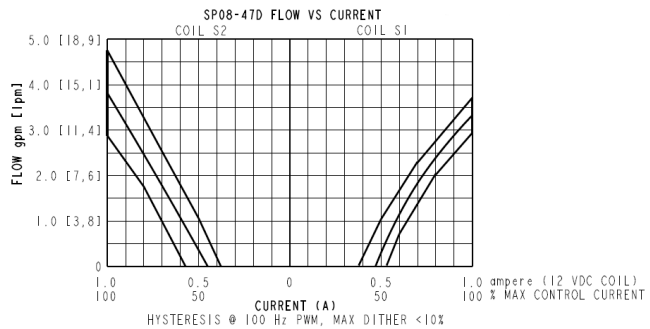
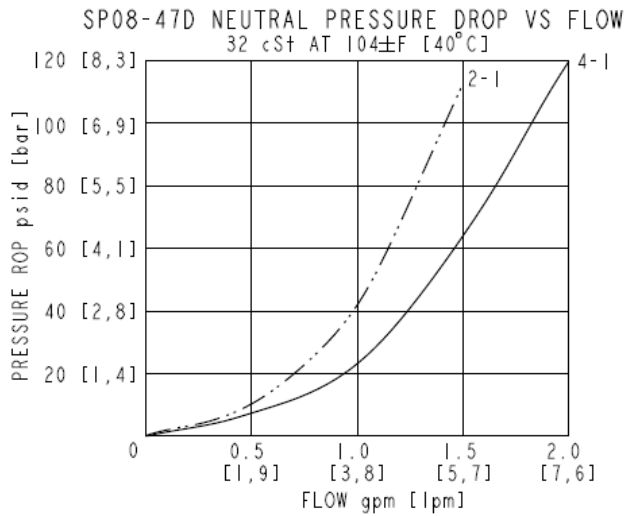
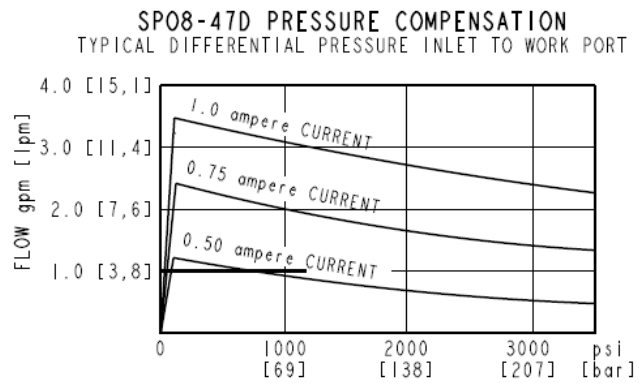
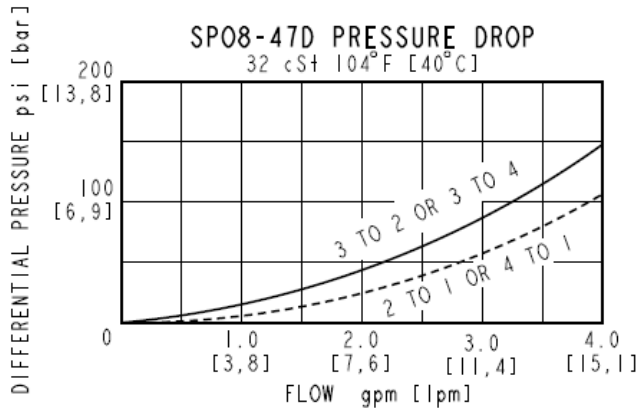
**Properties**

Maximum operating contamination 18/16/13 per ISO 4406 level  
 Unit weight 0.14 kg (0.31 lb)  
 Internal wetted surface area 158 cm<sup>2</sup> (24.5 in<sup>2</sup>)

**Electrical Parameters**

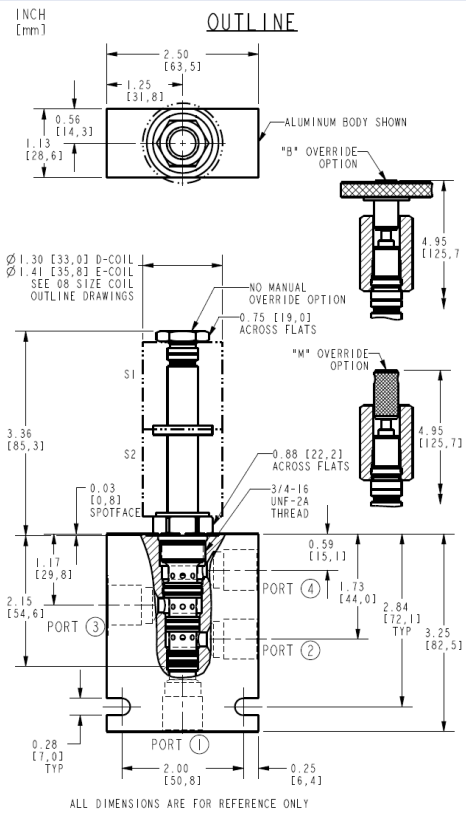
Valve inductance 124 mH - **Note: S1**  
 97 mH - **Note: S2**  
 Maximum control current 1.0 A - **Note: 12 V coil**  
 Threshold current See performance graphs  
 Dither PWM frequency 90 to 110 Hz

**Performance**





## Dimensions



## Installation Specifications

|                               |                                   |   |
|-------------------------------|-----------------------------------|---|
| Cavity                        | VC08-4                            |   |
| Cartridge installation torque | 25.8 to 28.5 N-m (19 to 21 ft-lb) | - <b>Note:</b> Up to maximum of 40.7 N-m (30 ft-lb) |
| Coil nut torque               | 5.4 to 6.8 N-m (4 to 5 ft-lb)     |   |
| Orientation restriction       | None                              |   |

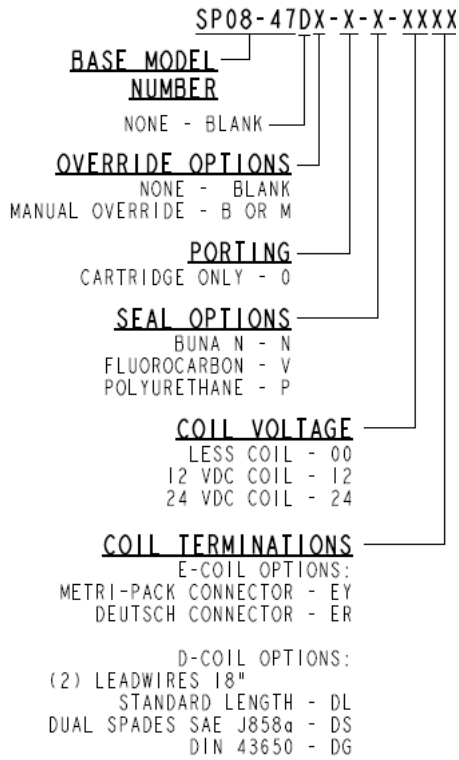
## Accessories

|          |             |                                |
|----------|-------------|--------------------------------|
| Seal kit | SK08-4X-MMM | - <b>Note:</b> X = Seal option |
|----------|-------------|--------------------------------|

## Order Code



**ORDERING INFORMATION**



**Model Options**

**SP08-47DE-H-J-L**

**E Manual Override**

| CODE  | DESCRIPTION  |
|-------|--|
| BLANK | NONE   |
| B     | Momentary PushPull Override, 1.5" Diameter Aluminum Knob |
| M     | Momentary Push/Pull Override, Red Knurled Knob           |

**H Line Body**

| CODE | DESCRIPTION                |
|------|----------------------------|
| 0    | No Body                    |
| 6T   | Aluminum SAE 6             |
| 6TD  | Ductile Iron SAE 6         |
| 3B   | Aluminum BSPP 3/8" (3)     |
| 3BD  | Ductile Iron BSPP 3/8" (3) |

**J Seal**

| CODE | DESCRIPTION  |
|------|--------------|
| N    | Buna-N       |
| V    | Fluorocarbon |
| P    | Polyurethane |

**L Coil**

| CODE | DESCRIPTION                     |
|------|---------------------------------|
| 0    | No Coil, D-Coil Spacer          |
| 0E   | No Coil, E-Coil Spacer          |
| 10DL | 10 VDC, D-Coil, Dual Lead Wires |
| 10DS | 10 VDC, D-Coil, Dual Spade      |



| CODE    | DESCRIPTION                                      |
|---------|--|
| 10EL    | 10 VDC, E-Coil, Dual Lead Wires, 18 inches long  |
| 10EL/36 | 10 VDC, E-Coil, Dual Lead Wires, 36 inches long  |
| 10ER    | 10 VDC, E-Coil, Deutsch                          |
| 12DG    | 12 VDC, D-Coil, DIN 43650                        |
| 12DL    | 12 VDC, D-Coil, Dual Lead Wires, 18 inches long  |
| 12DL/36 | 12 VDC, D-Coil, Dual Lead Wires, 36 inches long  |
| 12DL/W  | 12 VDC, D-Coil, Dual Lead Wires with Weatherpak  |
| 12DR    | 12 VDC, D-Coil, Deutsch                          |
| 12DS    | 12 VDC, D-Coil, Dual Spade                       |
| 12EG    | 12 VDC, E-Coil, DIN 43650                        |
| 12EJ    | 12 VDC, E-Coil, AMP Jr.                          |
| 12EL    | 12 VDC, E-Coil, Dual Lead Wires, 18 inches long  |
| 12EL/36 | 12 VDC, E-Coil, Dual Lead Wires, 36 inches long  |
| 12ER    | 12 VDC, E-Coil, Deutsch                          |
| 12EY    | 12 VDC, E-Coil, Metri-Pack 150                   |
| 20DG    | 20 VDC, D-Coil, DIN 43650                        |
| 20DS    | 20 VDC, D-Coil, Dual Spade                       |
| 20ER    | 20 VDC, E-Coil, Deutsch                          |
| 24AG    | 24 VDC, D-Coil, DIN 43650                        |
| 24AP    | 24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| 24DG    | 24 VDC, D-Coil, DIN 43650                        |
| 24DL    | 24 VDC, D-Coil, Dual Lead Wires, 18 inches long  |
| 24DL/36 | 24 VDC, D-Coil, Dual Lead Wires, 36 inches long  |
| 24DL/W  | 24 VDC, D-Coil, Dual Lead Wires with Weatherpak  |
| 24DR    | 24 VDC, D-Coil, Deutsch                          |
| 24DS    | 24 VDC, D-Coil, Dual Spade                       |
| 24EG    | 24 VDC, E-Coil, DIN 43650                        |
| 24EJ    | 24 VDC, E-Coil, AMP Jr.                          |
| 24ER    | 24 VDC, E-Coil, Deutsch                          |
| 24EY    | 24 VDC, E-Coil, Metri-Pack 150                   |
| 36DG    | 36 VDC, D-Coil, DIN 43650                        |
| 36DS    | 36 VDC, D-Coil, Dual Spade                       |