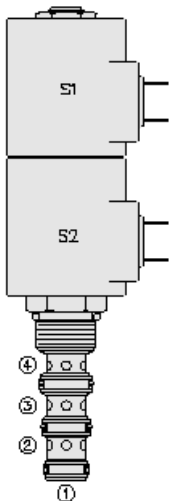




## Overview



### Description

A solenoid operated, direct acting, 3 position, 4-way, closed center 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

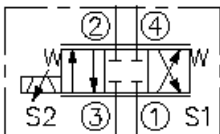
When de-energized, the SP10-47CX blocks flow to all ports, when coil #1 is energized, flow is allowed from port 3 to port 4, and from port 2 to port 1. When coil #2 is energized, flow is allowed from port 3 to port 2, and from port 4 to port 1.

**note:** that 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.
- Good linearity and hysteresis.
- Industry-common cavity.

### Symbol



## Ratings

### Pressure Ratings

Pressure rating	250 bar (3625 psi)
Proof pressure	345 bar (5000 psi)
Burst pressure	827 bar (12000 psi)

### Flow Ratings

Flow rating	22.7 lpm (6.0 gpm) 20.8 lpm (5.5 gpm)	- <b>Note:</b> Manual override options "b" and "m"
Maximum internal leakage	310 ml/min (19 in <sup>3</sup> /min)	- <b>Note:</b> From port 3 to 4 or port 3 to 2 with the valve in neutral at 207 bar (3000 psi)
Hysteresis per cent	10 %	- <b>Note:</b> Maximum, flow rating between lpm (1.0 to 5.5 gpm)

### 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 viton seals
	-54 to 107 °C (-65 to 225 °F)	- <b>Note:</b> With polyurethane seals
Storage temperature	-40 to 70 °C (-40 to 160 °F)	
Ambient temperature	-40 to 70 °C (-40 to 160 °F)	

## 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

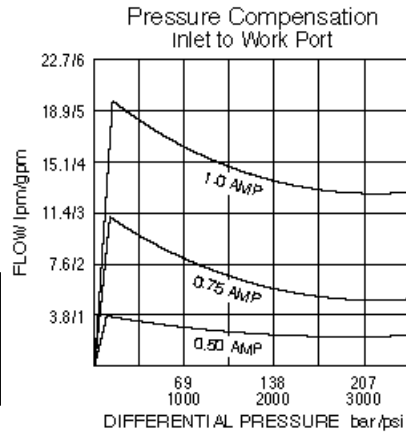
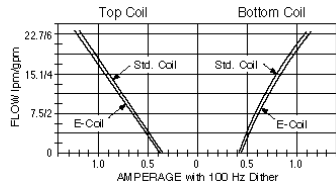
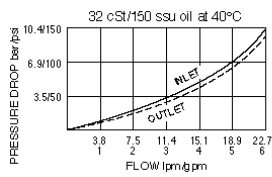
Unit weight	0.27 kg (0.60 lb)	- <b>Note:</b> SP10-47C
Internal wetted surface area	235 cm <sup>2</sup> (36.4 in <sup>2</sup> )	- <b>Note:</b> SP10-47C



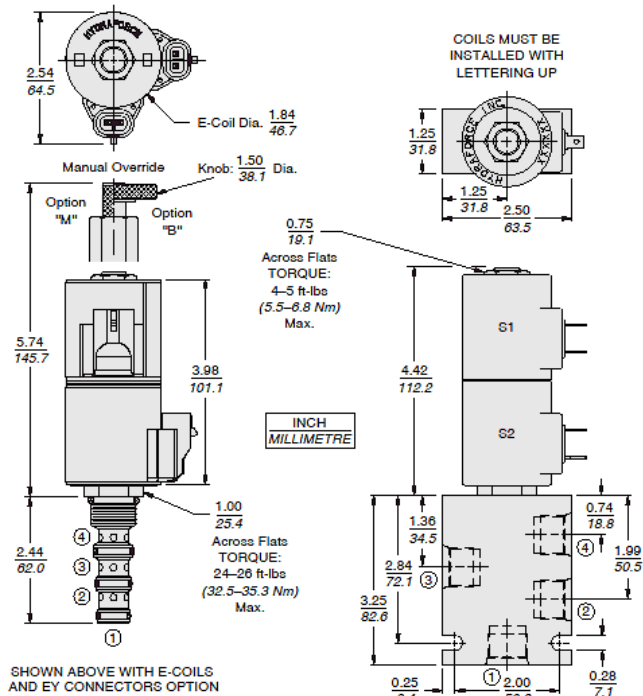
## Electrical Parameters

Valve inductance	198 mH	- <b>Note:</b> At 1.2 A
Maximum control current	1.2 A	- <b>Note:</b> For 12 V coil
Threshold current	0.52 A	- <b>Note:</b> S1, 12 V coil
	0.54 A	- <b>Note:</b> S2, 12 V coil
Dither PWM frequency	100 Hz	

## Performance



## Dimensions



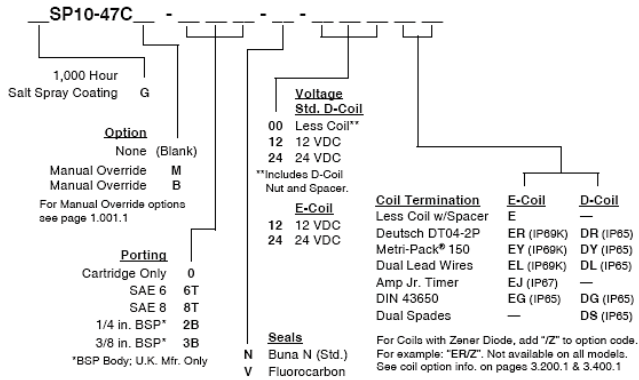
## Installation Specifications

Cavity	VC10-4
Cartridge installation torque	32.5 to 35.3 N-m (24 to 26 ft-lb)
Coil nut torque	6.8 to 9.5 N-m (5 to 7 ft-lb)
Orientation restriction	None

## Accessories

Seal kit	SK10-4X-MMMM	- <b>Note:</b> X = seal option
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## Order Code



**Model Options**

**SP10-47CE-H-J-L**

**E Manual Override**

CODE	DESCRIPTION
B	Momentary Push/Pull Override, 1.5" Diameter Aluminum Knob
BLANK	NONE
K	Three Position 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
8T	Aluminum SAE 8
6TD	Ductile Iron SAE 6

**J Seal**

CODE	DESCRIPTION
N	Buna-N
V	Fluorocarbon
P	Polyurethane
U	PPDI Urethane

**L Coil**

CODE	DESCRIPTION
0	No Coil, D-Coil Spacer
0E	No Coil, E-Coil Spacer
10DG	10 VDC, D-Coil, DIN 43650
10DL	10 VDC, D-Coil, Dual Lead Wires
10DS	10 VDC, D-Coil, Dual Spade
10EL	10 VDC, E-Coil, Dual Lead Wires
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



CODE	DESCRIPTION
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
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
24DL/W	24 VDC, D-Coil, Dual Lead Wires with Weatherpak
24DP	24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires
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.
24EL	24 VDC, E-Coil, Dual Lead Wires, 18 inches long
24EL/36	24 VDC, E-Coil, Dual Lead Wires, 36 inches long
24ER	24 VDC, E-Coil, Deutsch
24EY	24 VDC, E-Coil, Metri-Pack 150
36DS	36 VDC, D-Coil, Dual Spade