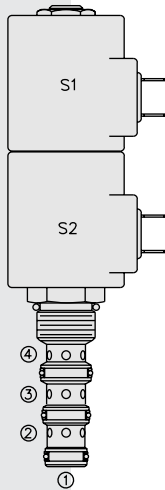


ELECTRO-PROPORTIONAL VALVES—DIRECTIONAL CONTROL

SP10-47C Spool, 4-Way, 3-Position, Closed Center



DESCRIPTION

A proportional solenoid-operated, four-way, three-position, spool-type, closed center, screw-in hydraulic cartridge valve.

OPERATION

When de-energized, the **SP10-47C** blocks flow to all ports. When coil S1 is energized, flow is allowed from ③ to ④, and from ② to ①. When coil S2 is energized, flow is allowed from ③ to ②, and from ④ to ①.

Initial meter-in flow begins at a nominal 0.4 amp on a 12 VDC system. Full flow of 6 gpm occurs at 1.1 to 1.2 amp on a 12 VDC system. Each coil has its own metering characteristics, which are quite similar (see performance chart).

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

In circuits where work port flows are unequal due to cylinder ratios, the higher return flow should be directed to port ②.

FEATURES

- Continuous-duty rated solenoids.
- Hardened precision spool and cage for long life.
- Optional coil voltages and terminations.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Optional waterproof E-Coils rated up to IP69K.
- Optional manual override.
- Industry-common cavity.
- Designed for good linearity and hysteresis.

RATINGS

Operating Pressure: 248 bar (3600 psi)

Flow: 22.7 lpm (6 gpm) max. (see performance chart)

Internal Leakage: 164 cc/minute (10 cu. in./minute) max. per side at 248 bar (3600 psi)

Hysteresis: Less than 7%

Temperature: -40 to 120°C with standard Buna seals

Coil Duty Rating: Standard Coils and E-Coils: Continuous up to 115% of nominal voltage

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 Recommendation: When possible, the valve should be mounted below the reservoir oil level. This will maintain oil in the armature preventing trapped air instability. If this is not feasible, mount the valve horizontally for best results. See page 9.020.1

Cavity: VC10-4; See page 9.110.1; **Cavity Tool:** CT10-4XX; See page 8.600.1

Seal Kit: SK10-4X-MMM; See page 8.650.1

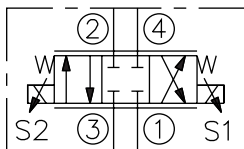
Coil Nut: Part No. 7004400; **Manual Override Coil Nut:** Part No. 4528180

Coil Spacer: Part No. 4539700

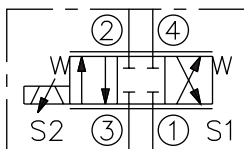
For E-coils manufactured prior to 1-1-04, see page 3.400.1 for coil nut & spacer info.

SYMBOLS

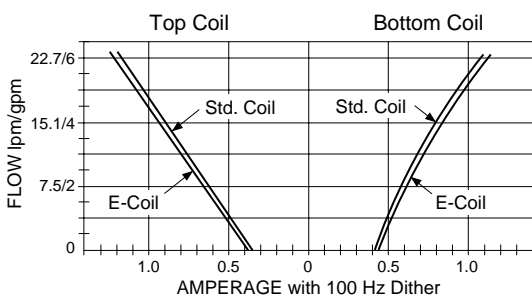
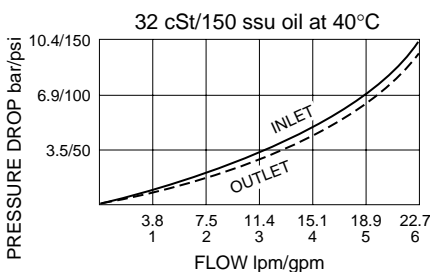
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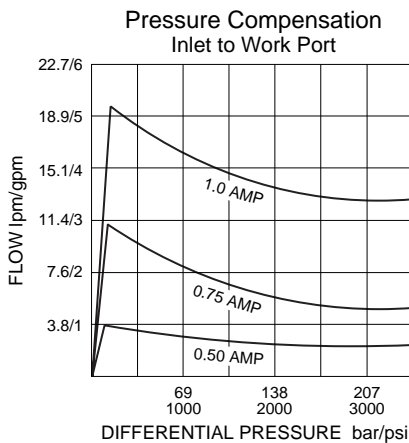
PERFORMANCE (Cartridge Only)



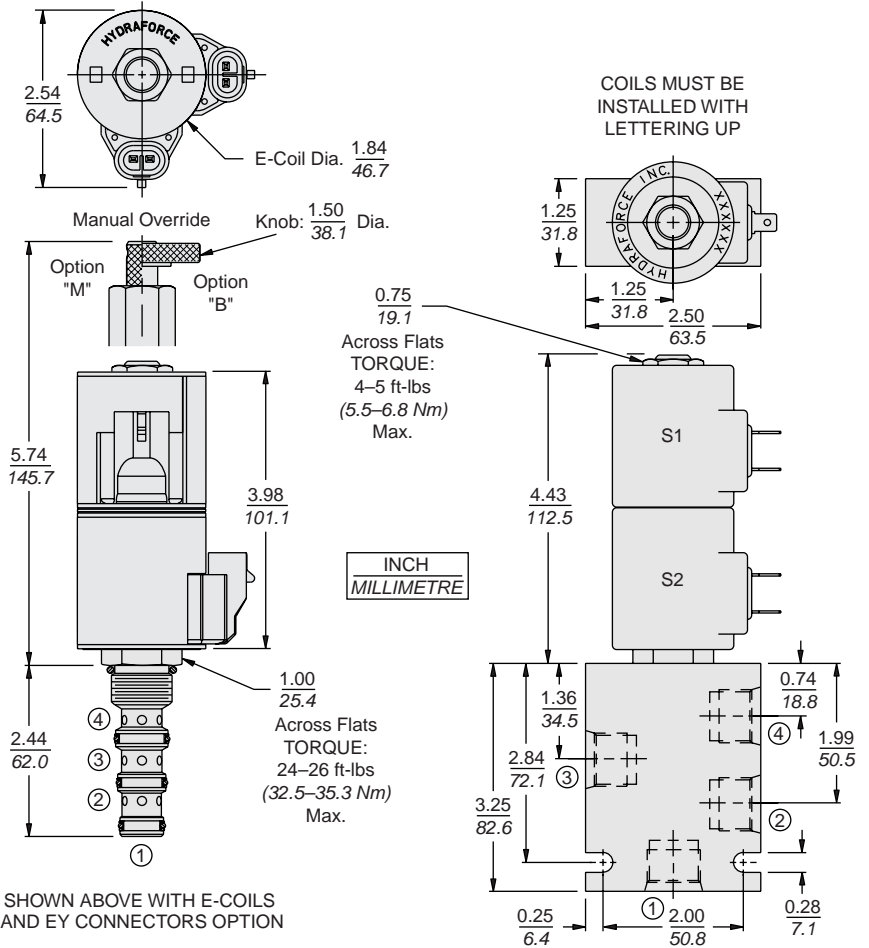
Recommended Electronic Controllers:
See page 2.001.1 or our Electronics catalog.

Performance information continued on following page.

PERFORMANCE (cont'd.)



DIMENSIONS



MATERIALS

Cartridge: Weight: 0.30 kg. (0.65 lbs.) Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and back-ups std.

Standard Ported Body: Weight: 0.36 kg. (0.80 lbs.) Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.010.1.

Standard Coil: Weight each: 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.); Perfect wound, fully encapsulated with rugged external metal shell; Rated up to IP69K with integral connectors.

See page 3.400.1 for all E-Coil retrofit applications.

TO ORDER

SP10-47C

Option	Porting	Voltage Std. Coil	Termination (VDC) Std. Coil
None (Blank)	Cartridge Only 0	0 Less Coil**	DS Dual Spades
Manual Override M	SAE 6 6T	12 12 VDC	DG DIN 43650
Manual Override B	SAE 8 8T	24 24 VDC	DL Leadwires (2)
For Manual Override options see page 1.001.1	1/4 in. BSP* 2B	**Includes Std. Coil Nut	DL/W Leads w/Weatherpak® Connectors
	3/8 in. BSP* 3B	E-Coil	DR Deutsch DT04-2P
	*BSP Body; U.K. Mfr. Only	12 12 VDC	Termination (VDC) E-Coil
		24 24 VDC	ER Deutsch DT04-2P (IP69K Rated)
		Seals	EY Metri-Pack® 150 (IP69K Rated)
		N Buna N (Std.)	Coils with internal diode are available. Consult factory.
		V Fluorocarbon	