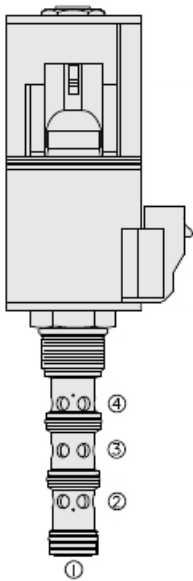
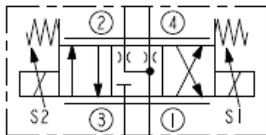




Overview



Symbol



Description

The HSP12-47HX is a high pressure, proportional, 4 port, 3 position, spool type, screw-in, cartridge style, hydraulic solenoid valve.

Operation

When de-energized, the HSP12-47H blocks flow to port 3, while allowing flow from port 2 to port 1 and port 4 to port 1 through a bleed orifice. When S1 coil is energized, flow is allowed from 3 to 4, and from 2 to 1. when S2 coil is energized, flow is allowed from port 3 to 2, and from 4 to 1. In circuits where work port flows are unequal due to cylinder ratios, the higher return flow should be directed to port 4.

Manual Override Operation

For normal valve operation (neutral) the manual override pin must be seated in the center detent groove (ID groove on knob is in-line with top of coil nut). To shift the valve manually from neutral to activate coil S1 function the knob is pushed down slightly and rotated 90° counterclockwise and pulled. To detent in this position rotate the knob an additional 90° counterclockwise to lock in the upper detent groove. To shift manually from neutral to activate coil S2 function the knob is pushed down all the way. To detent in this position rotate the knob 90° clockwise to lock in the lower detent groove. The manual override feature is intended for emergency use, not for continuous operation.

Features

- Manual override options
- Continuous-duty rated coil
- Efficient wet-armature construction
- E-Coils rated up to IP69K
- All HyPerformance products are tested to NFPA specification T2.6.1 at a verification level of 90% and an assurance of 99%

Ratings

Pressure Ratings

Pressure rating	350 bar (5075 psi) 420 bar (6090 psi) 276 bar (4000 psi)	- Note: (10% cycle life) - Note: Max when port 1 is inlet
Proof pressure	690 bar (10000 psi)	
Burst pressure	1380 bar (20000 psi)	

Flow Ratings

Flow rating	See performance graph	
Maximum internal leakage	1200 ml/min (73.2 in ³ /min) psi)	- Note: Port 3 to port 1, at de-energized 350 bar (5075 psi)

Other Ratings

Cycle life	One million cycles
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Temperature Ratings

Operating fluid temperature	-40 to 100 °C (-40 to 212 °F) -26 to 204 °C (-15 to 400 °F) -54 to 107 °C (-65 to 225 °F)	- Note: With buna N seals - Note: With fluorocarbon seals - Note: With urethane seals
Storage temperature	-40 to 70 °C (-40 to 160 °F)	
Ambient temperature	-40 to 90 °C (-40 to 194 °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	18/16/13 per ISO 4406



Properties

Unit weight	0.44 kg (0.96 lb)	- Note: Without coil and nut
Internal wetted surface area	335 cm ² (51.9 in ²)	

Installation Specifications

Cavity	HVC12-4	
Cartridge installation torque	156 to 170 N-m (115 to 125 ft-lb)	- Note: Steel/ductile iron cavity
Orientation restriction	None	

Electrical Parameters

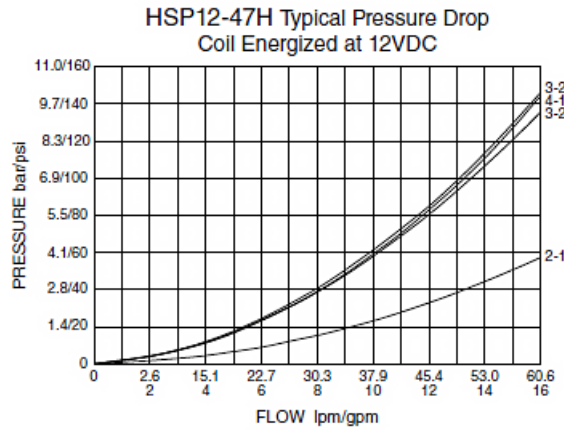
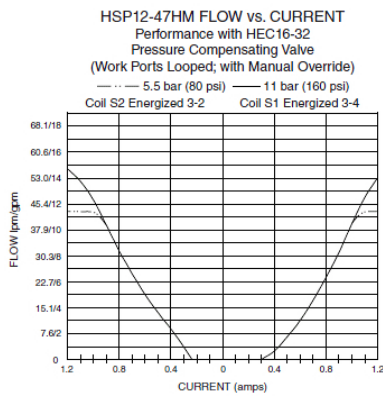
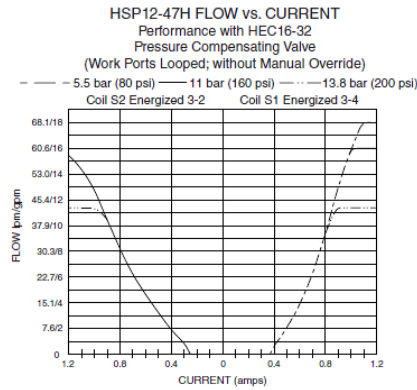
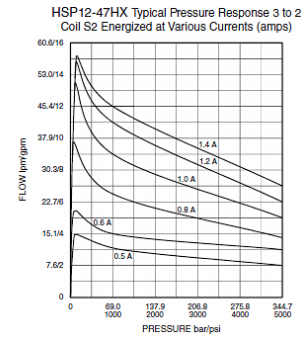
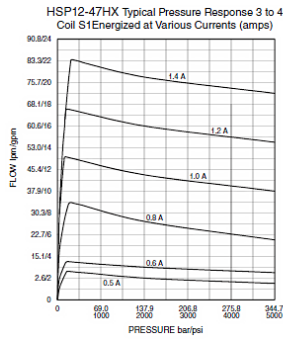
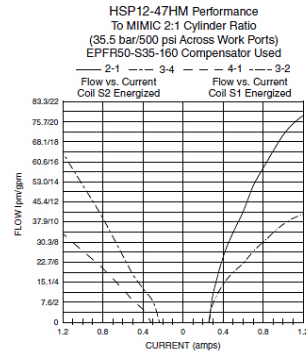
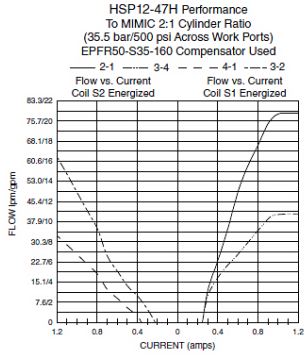
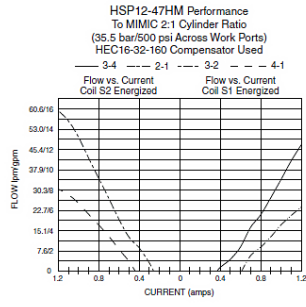
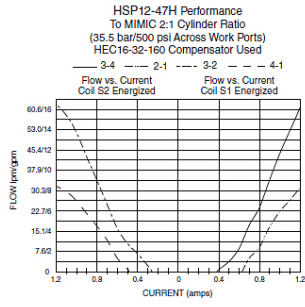
Maximum control current	1.2 A	- Note: Coil 12 V
Threshold current	0.43 A	- Note: HSP12-47H (nominal with 12Vdc coil, S1)
	0.33 A	- Note: HSP12-47C (nominal with 12Vdc coil, S2)
	0.41 A	- Note: HSP12-47HX (nominal with 12Vdc coil, S1)
	0.31 A	- Note: HSP12-47HX (nominal with 12Vdc coil, V2)
Recommended PWM frequency	100 Hz	

Accessories

Seal kit	HSK12-4N-MMM	- Note: Buna N
	HSK12-4V-MMM	- Note: Fluorocarbon
	HSK12-4U-OOO	- Note: Urethane
Housings		
Coils		

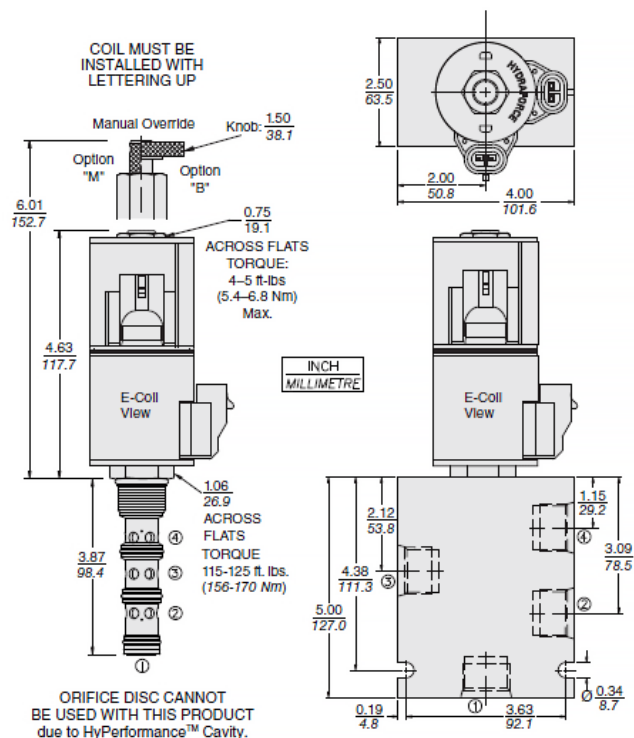


Performance





Dimensions



Materials

Materials

Cartridge: Weight (without coil and nut): 0.44 kg (0.96 lb); Steel with hardened work surfaces. Zinc-plated exposed surfaces. Urethane seals without back-up rings standard.

Standard Ported Body: Weight: 5.0 kg (11.11 lb); H-series ductile iron standard. Rated to 345 bar (5000 psi).

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.

Order Code

POSITION	CODE	DESCRIPTION
		HSP12-47HE-H-J-L
E		Manual Override
E	BLANK	NONE
E	B	Momentary Push/Pull Override, 1.5" Diameter Aluminum Knob
E	M	Momentary Push/Pull Override, Red Knurled Knob
H		Line Body
H	0	No Body
H	12HT	Ductile Iron SAE 12
J		Seal
J	N	Buna-N
J	V	Fluorocarbon
J	U	PPDI Urethane
L		Coil
L	0	No Coil, D-Coil Spacer
L	0E	No Coil, E-Coil Spacer
L	10DG	10 VDC, D-Coil, DIN 43650
L	10DL	10 VDC, D-Coil, Dual Lead Wires



POSITION	CODE	DESCRIPTION
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
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



POSITION	CODE	DESCRIPTION
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

