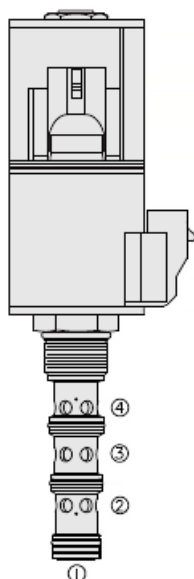
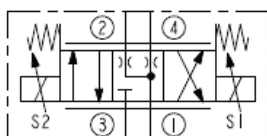




## Overview



### 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)	- <b>Note:</b> (10% cycle life) - <b>Note:</b> 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 <sup>3</sup> /min) (5075 psi)	- <b>Note:</b> Port 3 to port 1, at de-energized 350 bar

### Other Ratings

Cycle life	One million cycles
------------	--------------------

### 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)	- <b>Note:</b> With buna N seals - <b>Note:</b> With fluorocarbon seals - <b>Note:</b> 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)	- <b>Note:</b> Without coil and nut
Internal wetted surface area	335 cm <sup>2</sup> (51.9 in <sup>2</sup> )	

## Installation Specifications

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

## Electrical Parameters

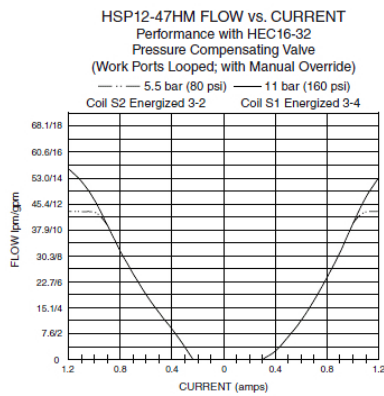
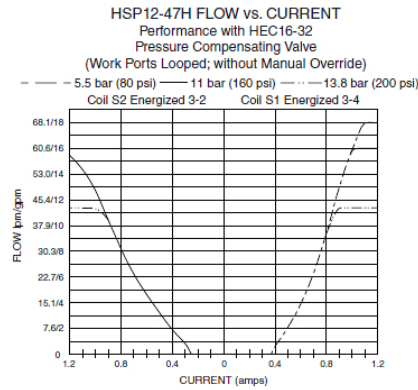
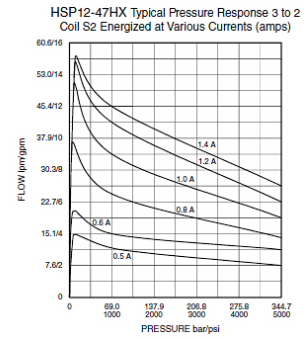
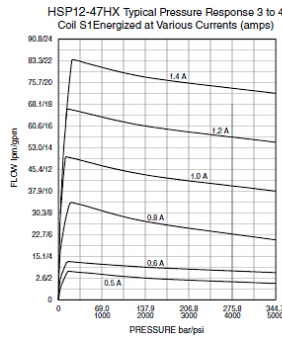
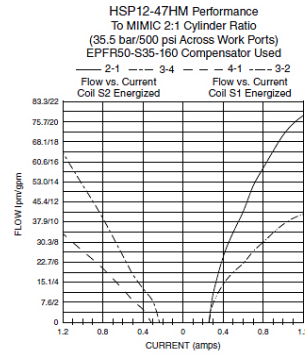
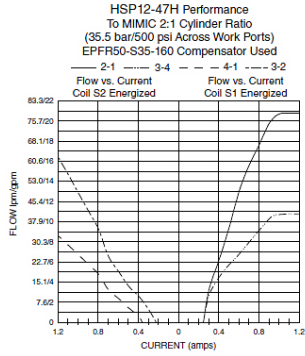
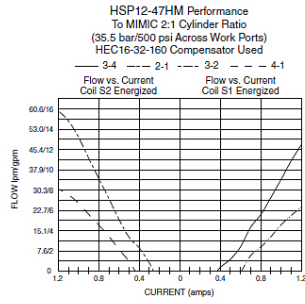
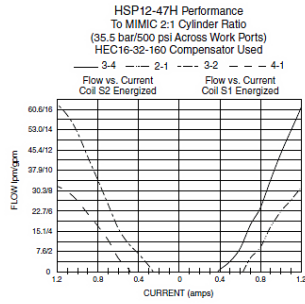
Maximum control current	1.2 A	- <b>Note:</b> Coil 12 V
Threshold current	0.43 A	- <b>Note:</b> HSP12-47H (nominal with 12Vdc coil, S1)
	0.33 A	- <b>Note:</b> HSP12-47C (nominal with 12Vdc coil, S2)
	0.41 A	- <b>Note:</b> HSP12-47HX (nominal with 12Vdc coil, S1)
	0.31 A	- <b>Note:</b> HSP12-47HX (nominal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

## Accessories

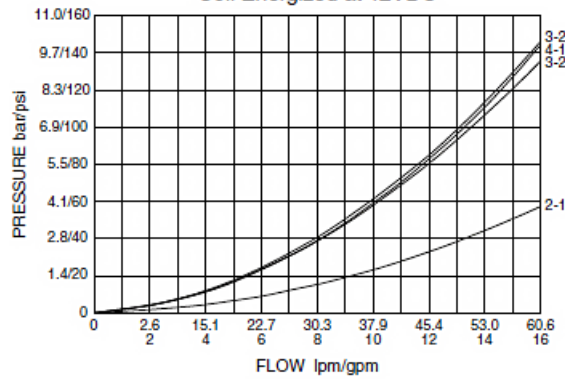
Seal kit	HSK12-4N-MMM	- <b>Note:</b> Buna N
	HSK12-4V-MMM	- <b>Note:</b> Fluorocarbon
	HSK12-4U-OOO	- <b>Note:</b> Urethane



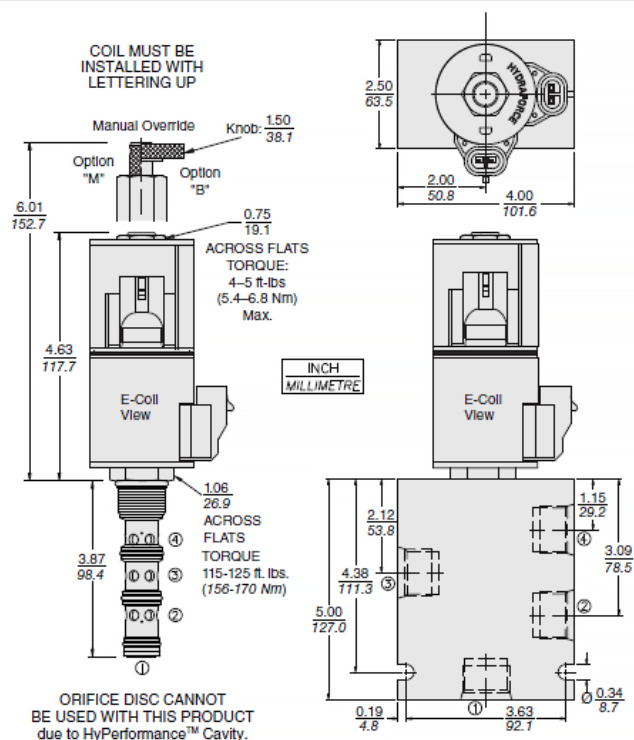
## Performance



### HSP12-47H Typical Pressure Drop Coil Energized at 12VDC



## Dimensions



## Order Code

HSP12-47H	
Option	None (Blank)
Manual Override	M
Manual Override with Knob	B
Porting	0
Cartridge Only	12HT
Seals	N
	V
	U
Urethane seals recommended for operating pressures above 241 bar (3500 psi).	
Voltage	0 Less Coil**
	12 12 VDC
	24 24 VDC
**Includes Std. Coil Nut Consult factory for additional voltage options.	
Coil Termination	Deutsch DT04-2P
	Metri-Pak 150
	Dual Lead Wires
	Amp Jr. Timer
	DIN 43650
	ER (IP69K)
	EY (IP69K)
	EL (IP69K)
	EJ (IP67)
	EG (IP65)
For Coils with Zener Diode, add "Z" to option code. For example: "ER/Z". Not available on all models. See coil option info. on page 3.400.1	

## Model Options

### HSP12-47HE-H-J-L

#### E Manual Override

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

#### H Line Body

CODE	DESCRIPTION
0	No Body
12HT	Ductile Iron SAE 12

#### J Seal

CODE	DESCRIPTION
N	Buna-N
V	Fluorocarbon



CODE	DESCRIPTION
U	PPDI Urethane

## L Coil

CODE	DESCRIPTION
0E	No Coil, E-Coil Spacer
10EL	10 VDC, E-Coil, Dual Lead Wires
10ER	10 VDC, E-Coil, Deutsch
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
20ER	20 VDC, E-Coil, Deutsch
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