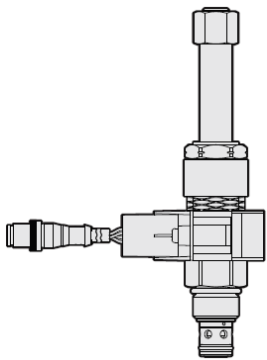
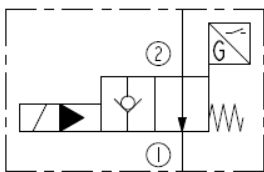




## Overview



### Symbol



### Description

A solenoid-operated, 2 port, normally open, poppet-type, screw-in hydraulic cartridge valve, designed to function as a load holding or blocking valve in applications requiring low internal leakage.

### Operation

When de-energized, the HSV10-P21A allows flow from 2 to 1 while severely restricting flow from port 1 to 2. When energized, the valve closes, blocking flow from 2 to 1. In this mode, flow from 1 to 2 will be allowed after overcoming the actuator and spring forces.

### Features

- Integral position sensor indicates when valve is shifted.
- Continuous-duty rated coil.
- Hardened seat for long life and low leakage.
- Optional coil voltages and terminations.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Waterproof E-Coils rated up to IP69K.
- Unitized, molded coil design.
- 960 hour salt-spray rated solenoid tubes and coils.
- All HyPerformance products are tested to NFPA specification T2.6.1 and are tested at a verification level of 90% and an assurance of 99%.

## Ratings

### Pressure Ratings

Pressure rating	350 bar (5075 psi)
Proof pressure	690 bar (10000 psi)
Burst pressure	1380 bar (20000 psi)

### Flow Ratings

Flow rating	60.6 lpm (16 gpm)
Maximum internal leakage	5 drops/min - <b>Note:</b> Max at 350 bar (5075 psi) 7.2 lpm (1.9 gpm) - <b>Note:</b> Typical flow (leakage) in transition at 345 bar (5000 psi). (see "Flow vs % Valve Shift" graph for flow in transition from valve close to valve open).

### Other Ratings

Response	47 ms - <b>Note:</b> Pull-in. Response times measured per NFPA/T3.5.30-2008 *Inlet pressure at port 2 is 345 bar (5000 psi) *Valve oriented vertically and purged of air 102 ms - <b>Note:</b> Drop-out. Response times measured per NFPA/T3.5.30-2008 *Inlet pressure at port 2 is 345 bar (5000 psi) *Valve oriented vertically and purged of air
Minimum pull-in voltage	10.2 Vdc - <b>Note:</b> 12 Vdc coil

### 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) sensor operating temperature*	- <b>Note:</b> With buna N seals - <b>Note:</b> With fluorocarbon seals *See Position - <b>Note:</b> With urethane seals *See Position
Storage temperature	-40 to 70 °C (-40 to 160 °F)	
Ambient temperature	-40 to 70 °C (-40 to 160 °F)	
Position sensor operating temperature	-40 to 110 °C (-40 to 230 °F)	- <b>Note:</b> Sensor element operating temperature limits the operating temperature of the entire assembly



## 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

## Position Sensor Specifications

### Electrical Parameters

Supply voltage	9 to 32 Vdc	- <b>Note:</b> Vcc
Output voltage with target present	Vcc	
Output clamp current	40 to 65 mA	- <b>Note:</b> For Vcc up to 32 Vdc

### Ratings

ESD	±8 kV	- <b>Note:</b> Air discharge
EMI	30 V/m	- <b>Note:</b> From 400 MHz to 2 GHz
IP rating	IP67	
Vibration	10 G	- <b>Note:</b> 10 to 2000 Hz sinusoidal
Mechanical shock	50 G	- <b>Note:</b> 11 ms, half-wave sinusoidal

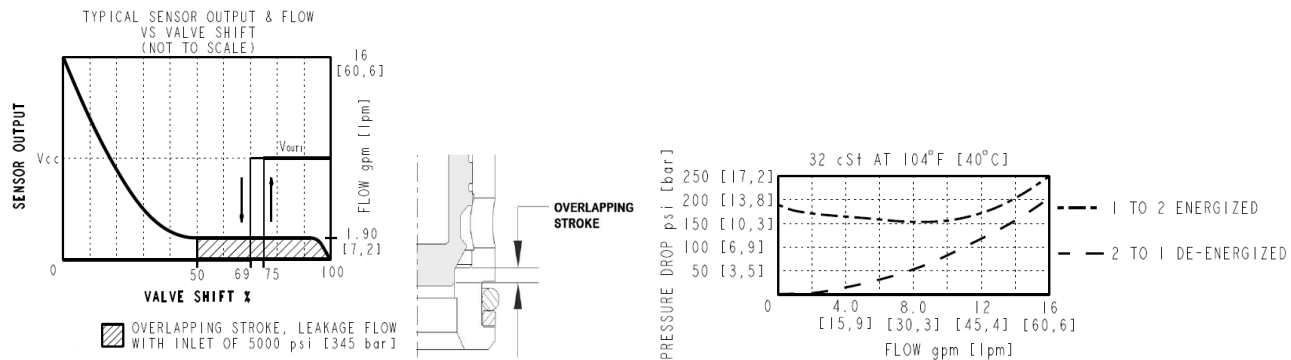
### Properties

Connector	Deutsch DT04-4P	- <b>Note:</b> Option N3 (dual output)
	M12	- <b>Note:</b> Option M3 (dual output)

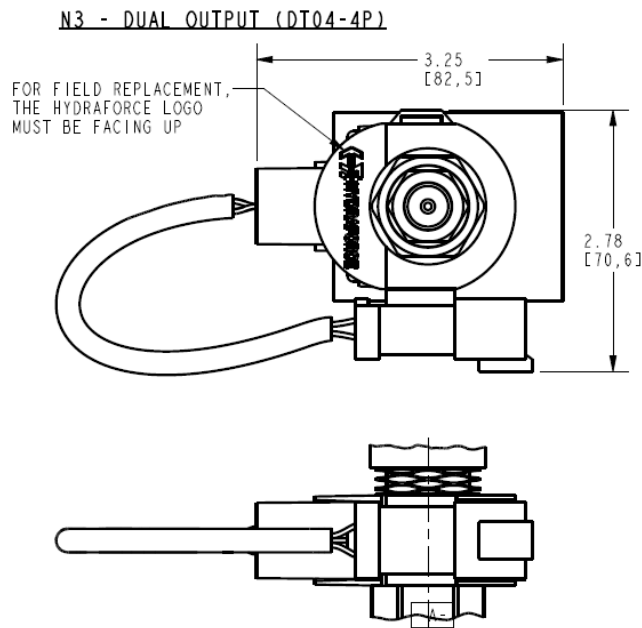
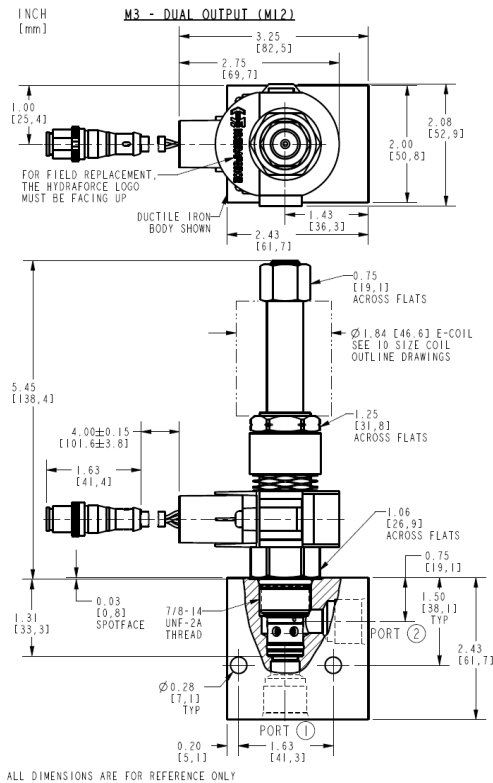
## Properties

Unit weight	0.54 kg (1.2 lb)	- <b>Note:</b> Cartridge
Internal wetted surface area	293 cm <sup>2</sup> (45.4 in <sup>2</sup> )	

## Performance

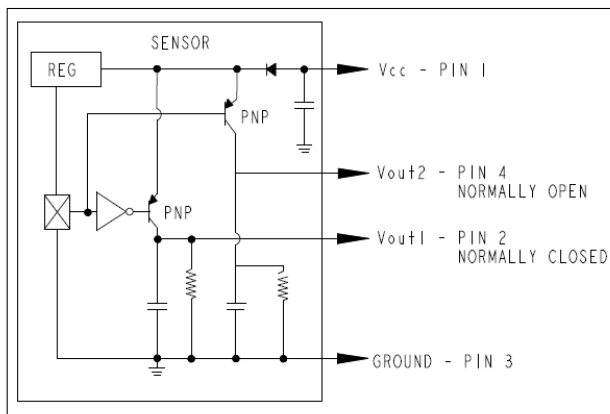


## Dimensions

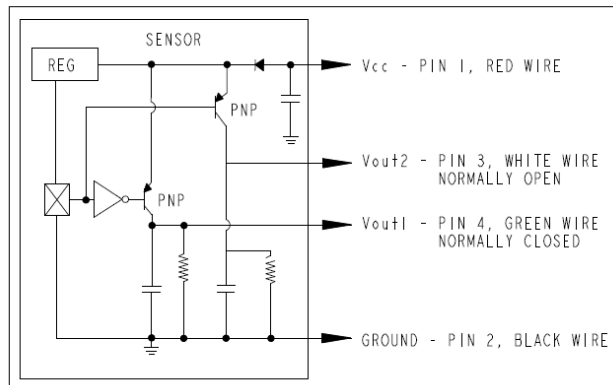


## Wiring Diagrams

M3 SENSOR WIRING DIAGRAM



N3 SENSOR WIRING DIAGRAM



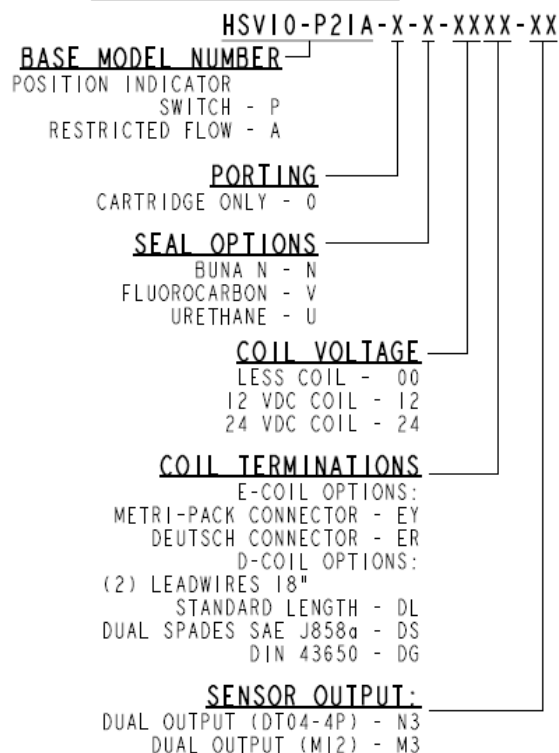
## Installation Specifications

Cavity	HVC10-2	
Cartridge installation torque	101.7 to 115.2 N-m (75 to 85 ft-lb)	- <b>Note:</b> Steel/ductile iron cavity
Coil nut torque	5.8 to 9.5 N-m (5 to 7 ft-lb)	
Orientation restriction	None	

## Accessories

Seal kit	SK10-2X-T	- <b>Note:</b> X = Seal option
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## Order Code

**ORDERING INFORMATION****Model Options****HSV10-P21AE-H-J-L-M****E Manual Override**

CODE	DESCRIPTION
BLANK	NONE
K	Momentary Push Override, Knob
P	Momentary Push Override, Button

**H Line Body**

CODE	DESCRIPTION
0	No Body

**J Seal**

CODE	DESCRIPTION
N	Buna-N
V	Fluorocarbon
HV	High Durometer Fluorocarbon
U	PPDI Urethane

**L Coil**

CODE	DESCRIPTION
0	No Coil
10EL	10 VDC, E-Coil, Dual Lead Wires
10ER	10 VDC, E-Coil, Deutsch
10ER/Z	10 VDC, E-Coil, Deutsch with Zener Diode
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



CODE	DESCRIPTION
12EL/36	12 VDC, E-Coil, Dual Lead Wires, 36 inches long
12EL/W/Z	12 VDC, E-Coil, Dual Lead Wires with WeatherPak and Zener Diode
12EL/Z	12 VDC, E-Coil, Dual Lead Wires with Zener Diode
12ER	12 VDC, E-Coil, Deutsch
12ER/Z	12 VDC, E-Coil, Deutsch with Zener Diode
12EY	12 VDC, E-Coil, Metri-Pack 150
12EY/Z	12 VDC, E-Coil, Metri-Pack 150 with Zener Diode
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
24EL/W/Z	24 VDC, E-Coil, Dual Lead Wires with WeatherPak and Zener Diode
24ER	24 VDC, E-Coil, Deutsch
24ER/Z	24 VDC, E-Coil, Deutsch with Zener Diode
24EY	24 VDC, E-Coil, Metri-Pack 150
24EY/Z	24 VDC, E-Coil, Metri-Pack 150 with Zener Diode

M Position Sensor Termination

CODE	DESCRIPTION
BLANK	No Position Sensor
M3	Neutral Sense, M12-4P, Dual Output NC/NO
N3	Neutral Sense, DT04-4P, Dual Output NC/NO