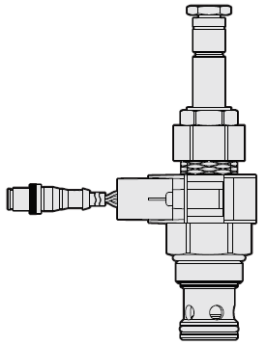




## Overview



### Description

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

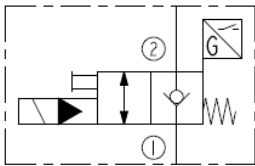
### Operation

When de-energized, the SV16-P22AX acts as a check valve, allowing flow to pass from port 1 to port 2, while blocking flow in the reverse direction. When energized, the poppet lifts to open the port 2 to port 1 flow path. In this mode, flow is also allowed from 1 to 2.

### 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.

### Symbol



## Ratings

### Pressure Ratings

Pressure rating	207 bar (3000 psi)
Proof pressure	345 bar (5000 psi)
Burst pressure	827 bar (12000 psi)

### Flow Ratings

Flow rating	151.4 lpm (40 gpm)
Maximum internal leakage	5 drops/min - <b>Note:</b> At 207 bar (3000 psi) 0.6 lpm (0.15 gpm) - <b>Note:</b> Typical flow (leakage) in transition at 207 bar (3000 psi). (see "Flow vs % Valve Shift" graph for flow in transition from valve close to valve open).

### Other Ratings

Response	91 ms - <b>Note:</b> Pull-in. Response times measured per NFPA/T3.5.30-2008 *Inlet pressure at port 2 is 207 bar (3000 psi) *Valve oriented vertically and purged of air 77 sec - <b>Note:</b> Drop-out. Response times measured per NFPA/T3.5.30-2008 *Inlet pressure at port 2 is 207 bar (3000 psi) *Valve oriented vertically and purged of air
Minimum pull-in voltage	10.2 Vdc - <b>Note:</b> 12Vdc coil

### 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 fluorocarbon seals *See Position sensor operating temperature*
	-54 to 107 °C (-65 to 225 °F)	- <b>Note:</b> With urethane seals *See Position sensor operating temperature*
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	20/18/14 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
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

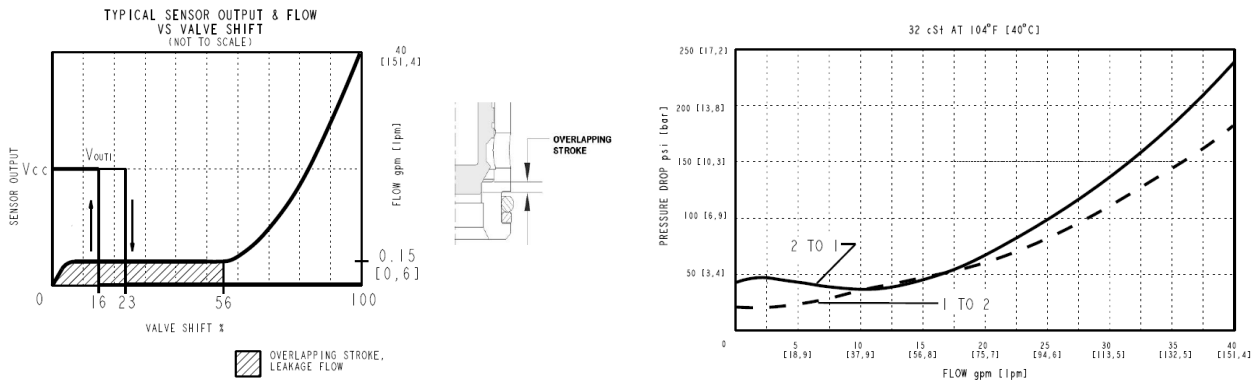
### Properties

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

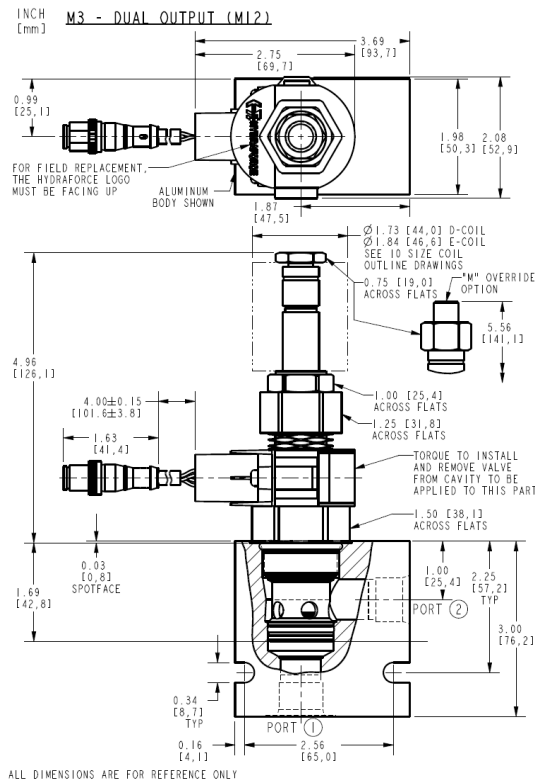
Unit weight	0.64 kg (1.42 lb)	- <b>Note:</b> SV16-P22AM WITH M12 CONNECTOR
Internal wetted surface area	328 cm <sup>2</sup> (50.9 in <sup>2</sup> )	

## Performance

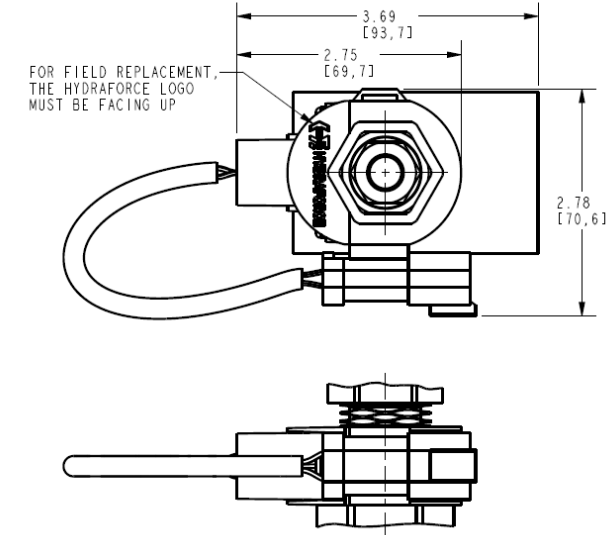




## Dimensions

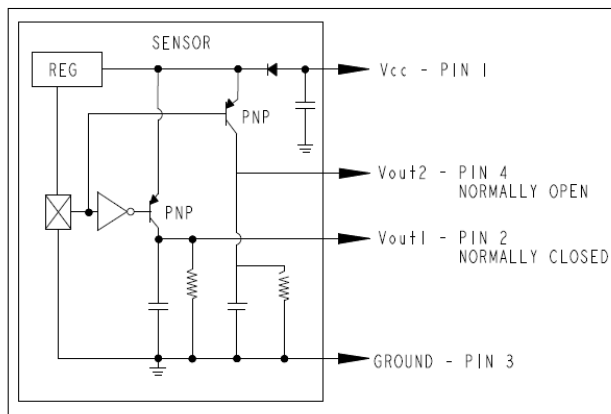


### N3 - DUAL OUTPUT (DT04-4P)

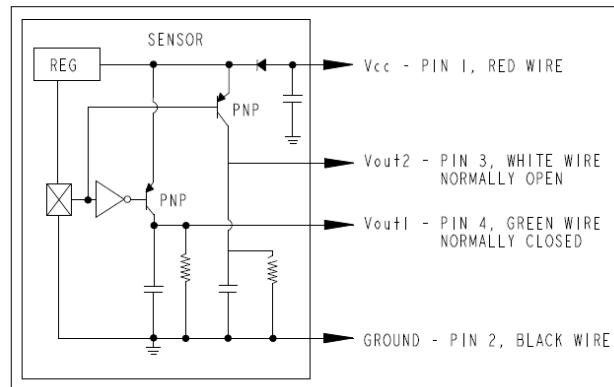


## Wiring Diagrams

M3 SENSOR WIRING DIAGRAM



N3 SENSOR WIRING DIAGRAM



## Installation Specifications

Cavity	VC12-2
Cartridge installation torque	62.4 to 73.2 N-m (46 to 54 ft-lb)
Coil nut torque	6.8 to 9.5 N-m (5 to 7 ft-lb)
Orientation restriction	None

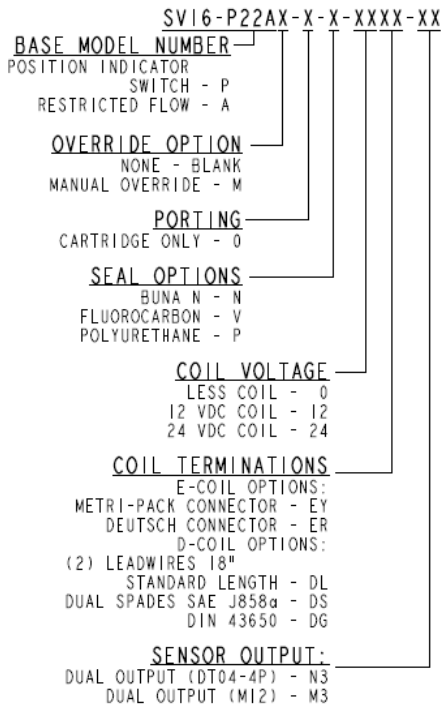
## Accessories

Seal kit	SK16-2X-T	- Note: X = Seal option
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## Order Code



## ORDERING INFORMATION



## Model Options

### SV16-P22AE-H-J-L-M

#### E Manual Override

CODE	DESCRIPTION
BLANK	NONE
M	Two Position Override, Red Knurled Knob

#### H Line Body

CODE	DESCRIPTION
0	No Body
12T	Aluminum SAE 12
16T	Aluminum SAE 16
12TD	Ductile Iron SAE 12
16TD	Ductile Iron SAE 16
6B	Aluminum BSPP 3/4" (6)
8B	Aluminum BSPP 1" (8)
8BD	Ductile Iron BSPP 1" (8)

#### J Seal

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

#### L Coil



CODE	DESCRIPTION
0	No Coil
10DG	10 VDC, D-Coil, DIN 43650
10DL	10 VDC, D-Coil, Dual Lead Wires
10DR/D	10 VDC, D-Coil, Deutsch with Diode
10DS	10 VDC, D-Coil, Dual Spade
10EL	10 VDC, E-Coil, Dual Lead Wires
10ER	10 VDC, E-Coil, Deutsch
10ER/Z	10 VDC, E-Coil, Deutsch with Zener Diode
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
12DL/W/D	12 VDC, D-Coil, Dual Lead Wires with Weatherpak with Diode
12DR	12 VDC, D-Coil, Deutsch
12DR/D	12 VDC, D-Coil, Deutsch with Diode
12DR/Z	12 VDC, D-Coil, Deutsch with Zener Diode
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
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
20DR/D	20 VDC, D-Coil, Deutsch with Diode
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
24DL/W/D	24 VDC, D-Coil, Dual Lead Wires with Weatherpak with Diode
24DP	24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires
24DR	24 VDC, D-Coil, Deutsch
24DR/D	24 VDC, D-Coil, Deutsch with Diode
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



CODE	DESCRIPTION
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
36DS	36 VDC, D-Coil, Dual Spade
115AG	115 VAC, D-Coil, DIN 43650
115AP	115 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires
230AG	230 VAC, D-Coil, DIN 43650
230AP	230 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires

### 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