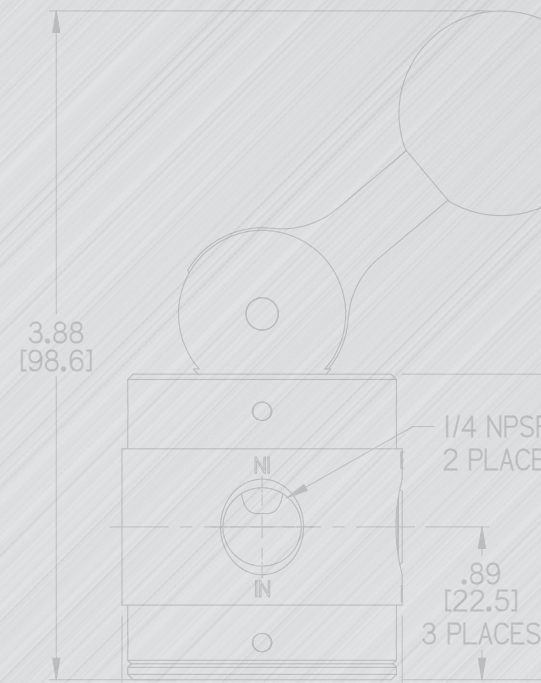
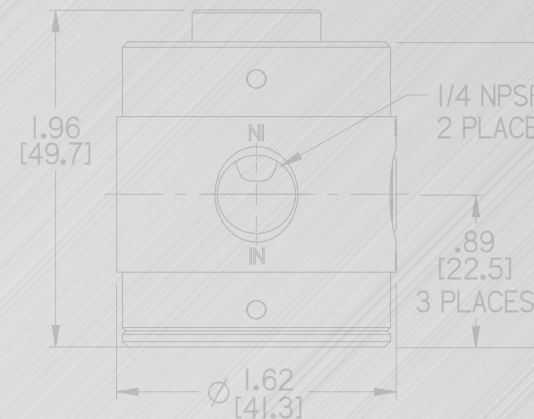




# Stainless Steel Diaphragm-Poppet Valves

2- and 3-Way | Solenoid, Air Pilot, Detented Lever



Classic Humphrey Diaphragm-Poppet Valves with high flow and tight sealing are now suitable for aggressive liquid and gas media.

MADE IN USA



# Stainless Steel Diaphragm-Poppet Valves

## 2- and 3-Way | Solenoid, Air Pilot, Detented Lever

The unique design of our classic Diaphragm-Poppet Valves is now available for difficult media control. Made of stainless steel and a variety of elastomer choices for media compatibility, these 1/4 NPT 2- and 3-port valves are offered as solenoid-air pilot operated, remote-air pilot operated and detented lever operator for suitability in a wide range of gas and liquid media applications.

The opposing diaphragm-poppet construction features two flexing diaphragm elastomers that incorporate the natural force of the pressurized media to operate reliably for millions of cycles. This simple 3-port design with few parts is inert and has high flow capacity. Stainless steel pipe plug is furnished loose to plug third port for its excellent 2-way function that checks media flow and seals tight in the closed position.

Materials in contact with the media are stainless steel and your choice of FKM, EPDM, NBR and Aflas® (FEPM) elastomers. Thus, Humphrey SST Diaphragm-Poppet Valves are appropriate for the control of a variety of gases and liquids, including aggressive chemicals and cleaners. Gas media to 100 PSI and liquids to 60 PSI.



**SSB250AE1**

### FEATURES

- Excellent Flow Capacity
- High Shifting Forces
- Tight Sealing
- Simple Design, Few Parts
- Inert Internal Construction

### BENEFITS

- Efficiency from a Compact Size
- Fast Cycling, Reliable, Durable
- No Leakage, No Media Waste
- Cost Effective, Trouble-Free
- Impervious to Controlled Media

## THE HUMPHREY DIAPHRAGM-POPPET VALVE: HOW IT WORKS

### BASIC 2-PORT VALVE

At rest (unactuated position), media to Port 1 fills bottom cavity and underside of bottom diaphragm, causing bottom poppet to seat and seal tight. Force of pressurized media compresses poppet into seat.

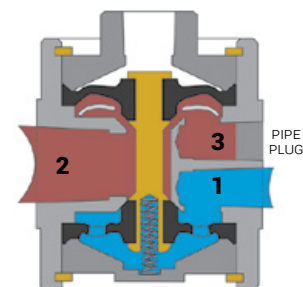
Upon actuation (actuated position), significantly greater force is applied over the top diaphragm causing valve to shift instantaneously and opening flow path from Port 1 to Port 2. Force of pilot air pressure compresses top poppet into seat, sealing tight and closing flow path to plugged Port 3.

Releasing air pilot pressure permits bottom diaphragm to quickly shift closed from Port 1. Any downstream media pressure present at Port 2 instantly becomes present under the top diaphragm (RED) accelerating the position shift to closed.

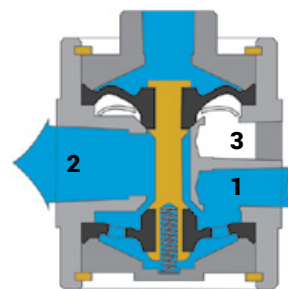
This simple design, with high shifting forces, results in cycle reliability and tight sealing. Pipe plug is furnished, but requires pipe sealant and tightening at Port 3.

### 3-PORT VALVE (SHOWN AT RIGHT)

This dual diaphragm-poppet design provides for an excellent 3-port valve for use as dual pressure or dual media selector valve or diverter valve function with source media to Port 2. Or consider as a normally closed 3-way function with a captured vent or drain function at Port 3. For 3-port function, omit use of furnished pipe plug at Port 3.



**Unactuated**



**Actuated**

### DETENTED LEVER



**SSB250V**

Manually control mild or aggressive gas or liquid media with this high flow, 3-port detented lever valve. Perfect as a shut-off valve for equipment or processes. Large handle with positive detent in closed and open positions. Pipe plug is furnished for excellent 2-port valve that seals tight in closed position. Omit pipe plug for 3-port selecting and diverting functions (consult factory).

### REMOTE AIR PILOT



**SSB250A**

Mount this aggressive media valve near the point of use and pilot operate it with cost effective compressed air pressure using miniature pneumatic valves mounted remotely. Excellent choice in hazardous or difficult environments. Suitable for the control of difficult gas or liquid media. Valve has high flow capacity and seals tight. Pipe plug furnished for excellent 2-port valve. Omit plug for 3-port function.

### EXTERNAL AIR PILOT SOLENOID



**SSB250AE1**

Control compatible mild or aggressive liquid or gas media reliably with our solenoid air pilot operator and 30 PSI (minimum) compressed air. Media flow stopped to seal tight at rest and shifts to a full 1/4" orifice high flow capacity when opened. Furnished pipe plug for excellent 2-port function or omit for reliable 3-port valve. Available normally closed or open, in 12VDC, 24VDC or 120VAC voltages and lead wire or DIN electrical entry.

MODEL	PORT SIZE	TYPE	FUNCTION	MAX FLOW	VOLTAGE
SSB250V	1/4 NPT	Detented Lever	2- or 3-Way, Normally Closed (NC) or Normally Open (NO)	Air: 1100 LPM @ 60 PSI (4.1 bar)	—
SSB250A	1/4 NPT (Pilot Port: 1/8 NPSF)	Remote Air Pilot			
SSB250AE1	1/4 NPT (Pilot Port: 10-32 UNF)	External Air Pilot Solenoid			12VDC, 24VDC, 120/50/60

### ELASTOMER MATERIAL OPTIONS

Select from the following elastomer materials. Research to be sure your media is compatible with the elastomer material.

SEAL MATERIAL	NOTES
FEPM (Tetrafluoroethylene Propylene)	Commonly known as Aflas®. Provides excellent resistance to heat, steam, amines, bases and sour gas (H2S), lubricants and some fuels.
EPDM (Ethylene-Propylene Diene Monomer)	EPDM is an excellent general-purpose material for certain chemicals, including detergents, sodium hydroxide solutions, and many other diluted acids.
FKM (Fluoroelastomer)	Commonly referred as Viton™. Suitable for applications that require excellent chemical resistance and high temperature resistance, with good physical properties.
NBR (Nitrile Butadiene)	Commonly known as Buna N. Synthetic rubber providing superior wear and tear resistance and very popular / best suited for heavier, industrial applications.



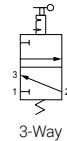
## Specifications

SPECIFICATIONS	SSB250V	SSB250A	SSB250AE1
TYPE OF OPERATION	Detented Lever Operator	Remote Air Pilot Operated	Solenoid - External Air Pilot Operated
FUNCTION	—	NC (Normally Closed) or NO (Normally Open)	
PIPING TYPE	Inline, Direct Piping		
NUMBER OF PORTS	2 (Remove Port 3 plug for 3-way)*		
PORT SIZE	1/4 NPT		
EXTERNAL AIR PILOT PORT SIZE	—	1/8 NPSF	10-32 UNF
MEDIA	Mild or Aggressive Gases and Liquids		
WETTED MATERIALS	316 Stainless Steel, 303 Stainless Steel and FKM; EPDM, NBR or FEPM		
PRESSURE RANGE - PSI (BAR)	Liquids: 0-60 (0 - 4); Gases 0-100 (0-7)		
EXTERNAL AIR PILOT PRESSURE - PSI (BAR)	—	30 (2.1) minimum or ≥ media pressure	
FLOW CAPACITY - LPM @ 60 PSI (4.1 BAR)	Air: 1100; Water: 32		
ESEOD - IN (MM)	0.24 (6.1)		
RESPONSE TIME - ON/ OFF (MS)	—		7 / 25
AMBIENT TEMPERATURE RANGE - °F (°C)	0 - 125 (18 - 50)		
WEIGHT (OZ)	13	11	15

\* Pipe plug is inserted into port, but not sealed. Remove plug, apply sealing material and tighten into Port 3.

ELECTRICAL SPECIFICATIONS	SSB250AE1
STANDARD VOLTAGES	12VDC, 24VDC, 120/50/60
ELECTRICAL ENTRY	19.5" Long Lead Wires, DIN (10mm DIN/B)
VOLTAGE TOLERANCE	+/- 10%
POWER CONSUMPTION	6.5W (DC), 8.5 VA (AC)
INSULATION RATING	Class F

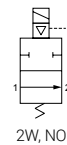
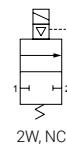
### SSB250V



### SSB250A



### SSB250AE1

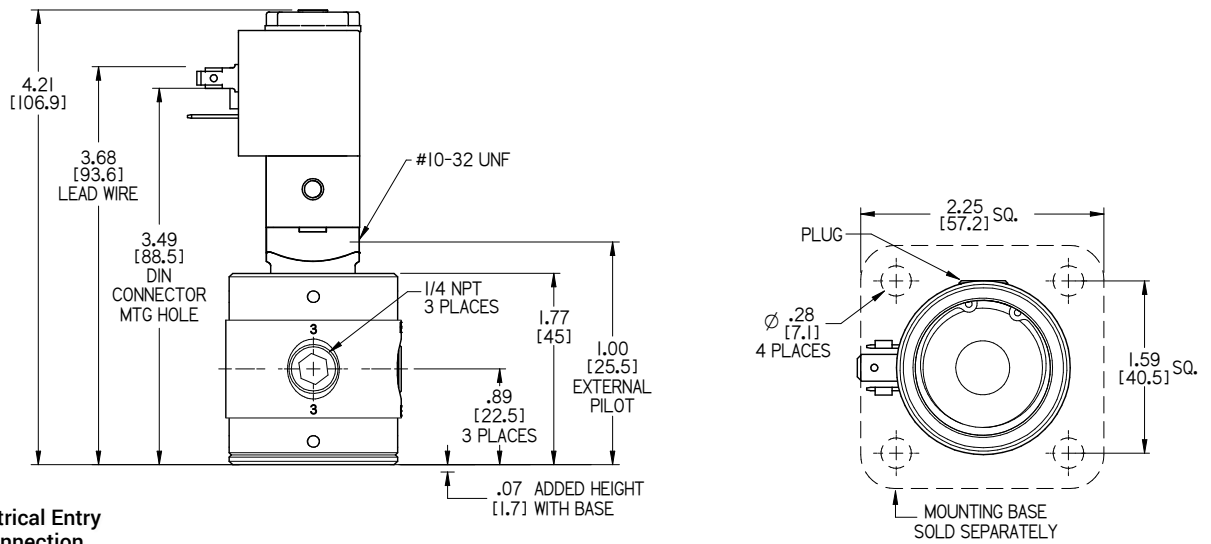


## CAUTION

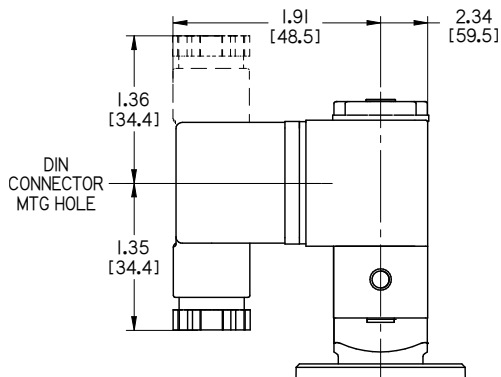
- Ensure controlled media is compatible with SSB250 valve materials. SSB250 wetted components are stainless steel and your choice of either FKM, EPDM, NBR or Aflas® (FEPM) diaphragm elastomers.
- Models SSB250AE1 and SSB250A require a minimum of 30 PSI pneumatic pilot pressure to operate. For best results, we recommend 10 PSI greater than controlled media pressure. Consult factory on 3-port functions.
- For two pressure selector functions, pipe the greater pressure to valve's Port 1 and both pressures combined must not exceed pressure rating of valve.
- Valves are furnished with SST pipe plug nested into the third port. Remove for 3-port function. For 2-port function, remove plug and add pipe sealant. Then re-install.

## Dimensional Drawings

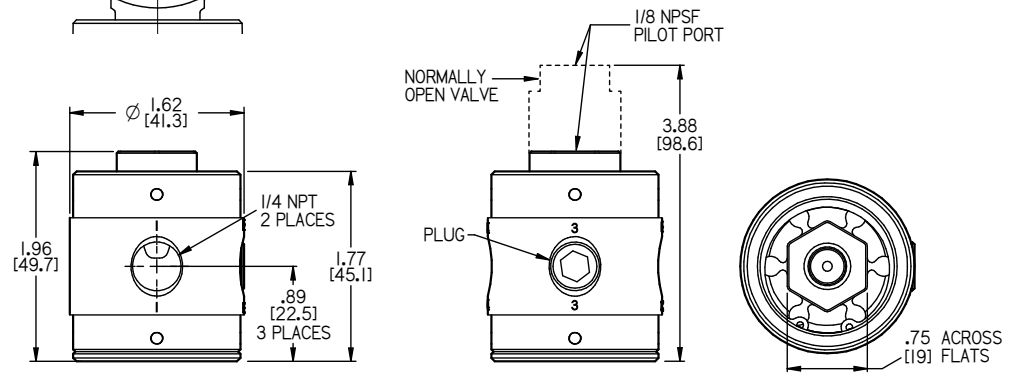
### SSB250AE1



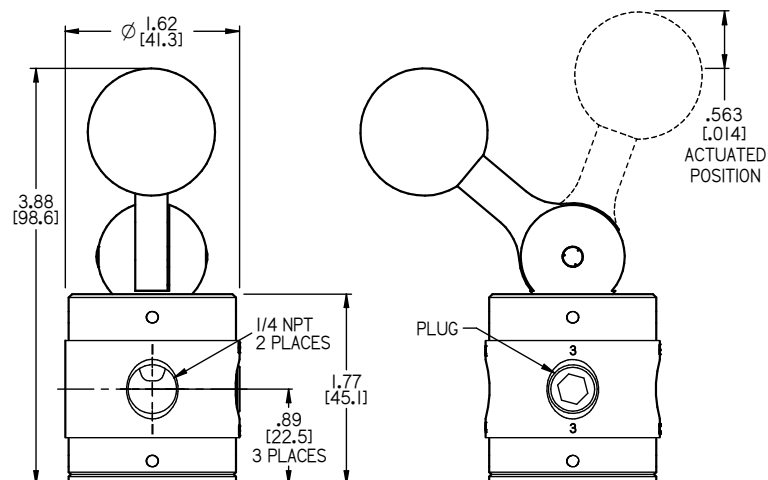
DIN (-39) Electrical Entry  
with HS5 Connection



### SSB250A



### SSB250V



How to Order

DETENTED LEVER

MODEL	BODY SEALS			
	FKM	EPDM	NBR	FEPM
SSB250V	–	E	B	A

Order Example: SSB250V21

REMOTE AIR PILOT

MODEL	FUNCTION		BODY SEALS			
	NORM CLOSED	NORM OPEN	FKM	EPDM	NBR	FEPM
SSB250A	–	11	–	E	B	A

Order Example: SSB250A11E

EXTERNAL AIR PILOT SOLENOID




MODEL	FUNCTION		ELECTRICAL ENTRY		BODY SEALS				AVAILABLE VOLTAGES
	NORM CLOSED	NORM OPEN	LEAD WIRES	DIN STYLE	FKM	EPDM	NBR	FEPM	
SSB250AE1	–	11	–	39	–	E	B	A	12VDC, 24VDC 120/50/60

Order Example: SSB250AE13912VDC

ORDER OPTION CODE

- Hyphen = Std, No Option Code Required

HOW TO ORDER | ACCESSORIES

DESCRIPTION	MODEL	NOTES
 PIPE PLUG	130-41BAGOF10	<ul style="list-style-type: none"><li>• Replacement (one is furnished with valve).</li><li>• Plug Port 3 for 2-way function.</li><li>• Stainless Steel. 1/4-18 NPSF</li><li>• Sold in bags of 10.</li></ul>
 DIN CONNECTOR	HS5	<ul style="list-style-type: none"><li>• Receptacle for DIN electrical entry valves (solenoid valve option code 39).</li></ul>
 MOUNTING BASE	8-20A	<ul style="list-style-type: none"><li>• Coated Steel.</li><li>• Screws (4) included.</li></ul>

Certified to the ISO 9001:2015 Standard.

