

Bellows-Sealed Valves

Fittings
Valves
Regulators
Filters
Tubing
Integrated Systems
Other Products
Technical Information



Contents

Low Pressure Bellows-Sealed Valves	
SM Series	V-139
Secondary Packed Bellows-Sealed Valves	
SU Series	V-147
High Pressure Pneumatic Bellows-Sealed Valves	
SVH Series	V-154

Fittings

Valves

Regulators

Filters

Tubing

Integrated
SystemsOther
ProductsTechnical
Information

Low Pressure Bellows-Sealed Valves

SM Series

Introduction

SM Series Low Pressure Bellows-Sealed Valves are suitable for high purity and ultra high purity applications. Replacing packing with bellows as the seal effectively improves valve cleanliness and extends service life. Additionally, wear parts are easy to replace.

Features

- ⦿ Metal-to-metal gasket seal without external leakage
- ⦿ Precision-formed metal bellows to ensure reliability
- ⦿ Non-rotating stem tip to increase shutoff cycle life
- ⦿ Manual and pneumatic actuator available
- ⦿ Pneumatic actuator to rotate 360° for ease of installation
- ⦿ Panel mounting and bottom mounting available
- ⦿ Position sensors available assembled on normally closed pneumatically actuated valves

Technical Data

Ports Size		1/4" to 3/8" or 6 mm to 8 mm
Flow Coefficient (Cv)		0.30
Orifice Size		0.16 in. (4.1mm)
Max. Working Pressure	Manual	500 psig (34.4 bar)
	Pneumatic	145 psig (10 bar)
Pneumatic Actuator Operating Pressure		60 to 90 psig (4.2 to 6.2 bar)
Temperature		PCTFE: -40 ~ 200 °F (-40 ~ 93 °C) PFA: -40 ~ 302 °F (40 ~ 150 °C) Polyimide: -40 ~ 400 °F (-40 ~ 204 °C)
Leak Rate (Helium)	Internal	≤4×10 ⁻⁹ std·cm ³ /s
	External	≤4×10 ⁻⁹ std·cm ³ /s

Flow Data

Air @ 70 °F (21 °C)
Water @ 60 °F (16 °C)

Orifice in. (mm)	Pressure Drop to Atmosphere psig (bar)	Air (l/min)	Water (l/min)
0.16 (4.1)	10 (0.68)	96	3.6
	50 (3.4)	250	7.9
	100 (6.8)	450	11.0
0.31 (8.0)	10 (0.68)	270	9.6
	50 (3.4)	730	21.6
	100 (6.8)	1280	30.0

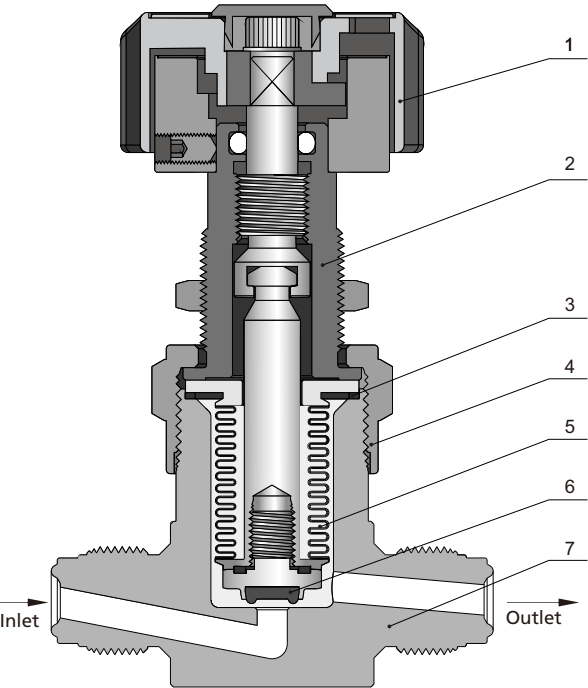


Process Specification

Item	Process Specification	Standard Cleaning and Packaging Process (FC-01) Special Cleaning and Packaging Process (FC-02)	Ultra High Purity Process (FC-03)
Material		316 SS, 316L SS	316L SS, 316L SS VAR
Wetted Surface Roughness		Ra 20 µin. (0.50 µm)	Ra 8 µin. (0.20 µm)
Polishing Process		Machine finished	Electropolished

Note: Refer to page P-01 for a detailed description of Process Specification.

Major Materials of Construction



Manual Model

Item	Component	Material/Specification
1	Handle	ABS/Aluminum
2	Bonnet	316 SS/ASTM A479
3	Bonnet Gasket	316L SS/ASTM A269
4	Bonnet Nut	316 SS/ASTM A479
5	Bellows	316L SS/ASTM A269
6	Seat	PCTFE/ASTM D1430 or PFA/ASTM D3307 or Polyimide
7	Body	316 SS or 316L SS or 316L SS VAR

Handles and Actuators

Manual - Round Handle

- One-half turn to operate from fully open to closed
- Handle with window to visually indicate open and closed states



Normal Temperature Model High Temperature Model

Pneumatic

- Normally open, "N.O." marked on the top of the actuator
- Normally closed, "N.C." marked on the top of the actuator



Position Sensors

Transmit a signal to an electrical device indicating the open and closed position of pneumatically actuated valves.

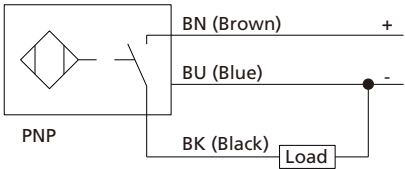
Technical Information

Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

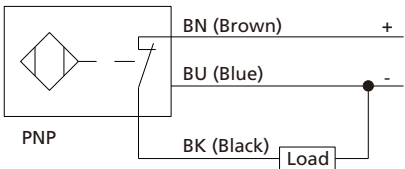
Note:
For normally closed pneumatic actuator valves, when fitted with normally open sensors, the sensors transmit signals with indicators illuminated when the valves are open. Conversely, when fitted with normally closed sensors, the sensors transmit signals with indicators illuminated when the valves are closed.

Wiring Diagram

Normally Open Position Sensor



Normally Closed Position Sensor



Explosion-proof Position Sensors

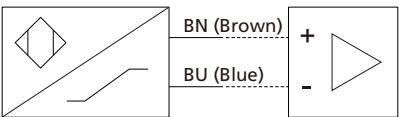
Transmit a signal to an electrical device, indicating the open and closed positions of pneumatically actuated valves.

Equipment Group II under ATEX Certification. The output complies with DIN EN 6094 7-5-6 (NAMUR) and the sensor should be used with an isolation amplifier.

Technical Information

Output	2 Wires DC
Voltage	8.2 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Wiring Diagram

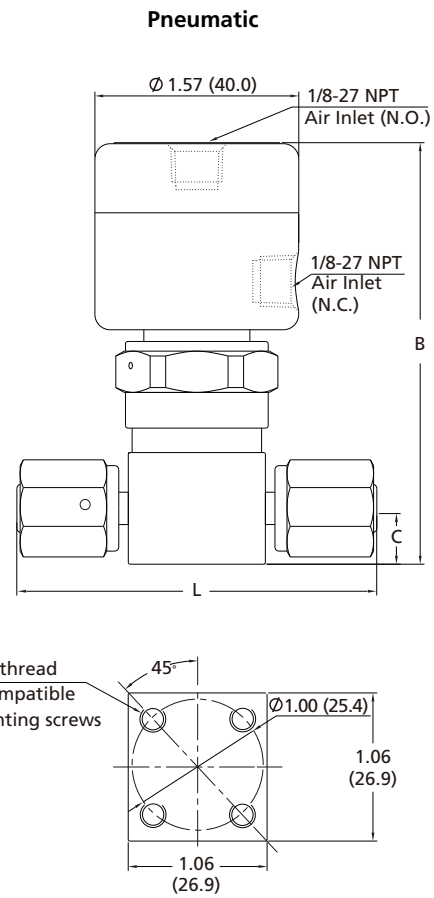
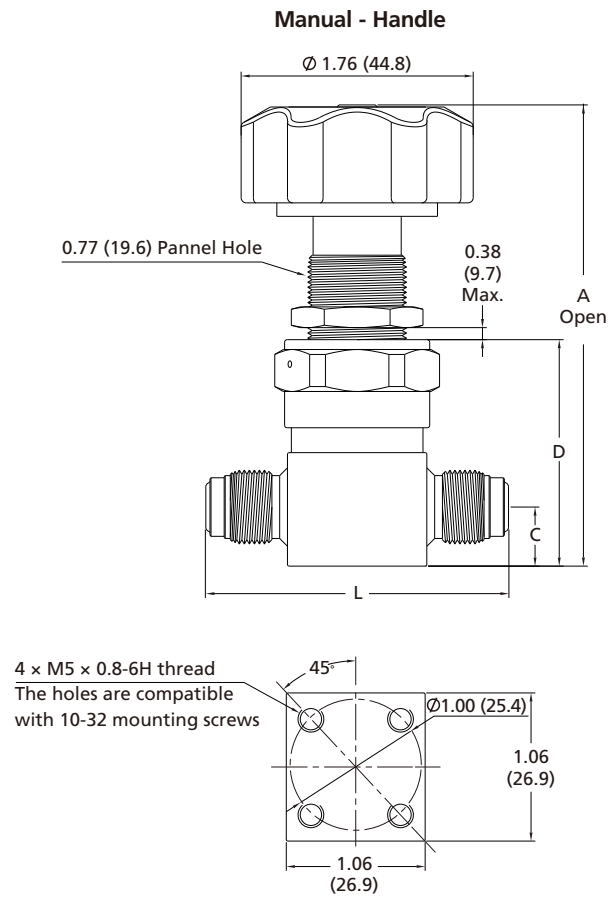


Dimensions and Ordering Information

Straight Type

Dimensions

Dimensions, in inches (millimeters), are for reference only.



Fittings

Valves

Regulators

Filters

Tubing

Integrated
SystemsOther
ProductsTechnical
Information

Fittings	Orifice in. (mm)	Basic Ordering Number	Connection Type and Size	Dimensions, in. (mm)				
				A	B	C	D	L
Valves	0.16 (4.1)	SM□□-FL4-4-	1/4" FITOK Tube Fitting	3.51 (89.4)	3.31 (84.0)	0.45 (11.4)	1.78 (45.2)	2.44 (62.1)
		SM□□-FL6-4-	3/8" FITOK Tube Fitting					2.58 (65.5)
		SM□□-ML6-4-	6 mm FITOK Tube Fitting					2.47 (62.8)
		SM□□-ML8-4-	8 mm FITOK Tube Fitting					2.53 (64.3)
		SM□□-TB4-4-	1/4" × 0.035" Tube Butt Weld					1.74 (44.2)
		SM□□-TB6-4-	3/8" × 0.035" Tube Butt Weld					
		SM□□-MTB6-4-	6 × 1 mm Tube Butt Weld					1.75 (44.4)
		SM□□-TS4-4-	1/4" Tube Socket Weld					
		SM□□-FR4-4-	1/4" Integral Male FR Fitting					2.30 (58.4)
		SM□□-FFR4-4-	1/4" Rotatable Female FR Fitting					2.76 (70.1)
		SM□□-FO4-4-	1/4" Male FO					2.00 (50.8)
Regulators	0.31 (8.0)	SM□□-FL6-8-	3/8" FITOK Tube Fitting	3.77 (95.7)	3.76 (95.5)	0.53 (13.5)	2.02 (51.3)	2.58 (65.5)
		SM□□-FL8-8-	1/2" FITOK Tube Fitting					2.80 (71.1)
		SM□□-ML10-8-	10 mm FITOK Tube Fitting					2.60 (66.0)
		SM□□-ML12-8-	12 mm FITOK Tube Fitting					2.80 (71.1)
		SM□□-TB6-8-	3/8" × 0.035" Tube Butt Weld					1.74 (44.2)
		SM□□-TB8-8-	1/2" × 0.049" Tube Butt Weld					
		SM□□-FR8-8-	1/2" Integral Male FR Fitting	3.87 (98.2)	3.86 (98.0)	0.63 (16.0)	2.12 (53.8)	2.58 (65.5)
		SM□□-FFR8-8-	1/2" Rotatable Female FR Fitting					3.15 (80.0)
Filters								
Tubing								
Integrated Systems								
Other Products								
Technical Information								

Ordering Number Description

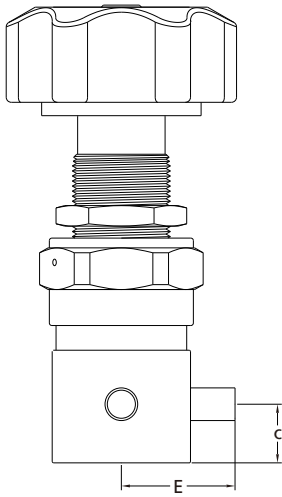
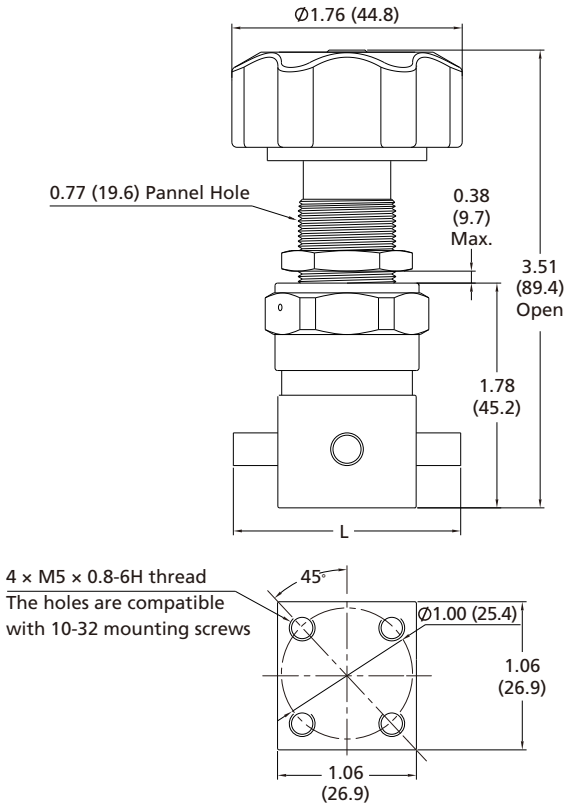
SMSS – FL4 – ML6 – 4 – RAF2MO – CE													
Body Material		Inlet Type		Inlet Size		Outlet Type	Outlet Size	Actuator Type	Seat	Process Specification			
6L	316L SS	TB	Fractional Tube Butt Weld	4	1/4" or 1/4"× 0.035"	Same as Inlet		R	PCTFE	FC-01			
6LV	316L SS VAR	MTB	Metric Tube Butt Weld	6	6 mm or 6 × 1 mm or 3/8" or 3/8"× 0.035"	Specified in the same way as Inlet			A	PFA	F2	FC-02	
SS	316 SS	TS	Fractional Tube Socket Weld	8	8 mm or 1/2" or 1/2"× 0.049"			C	Normally Closed Pneumatic	V	Polyimide	F3	FC-03
								O	Normally Open Pneumatic	Position Sensor			
											None		
										MO	Normally Open Position Sensor		
										MC	Normally Closed Position Sensor		
										Note: MO and MC sensors are only applicable to normally closed pneumatically actuated valves.			
										Product Certification			
										None			
										CE	CE Certification (For Pneumatic only)		
										AX	ATEX Certification (For Pneumatic only)		

Branch Type

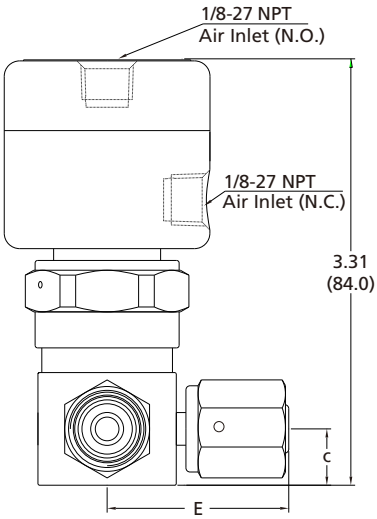
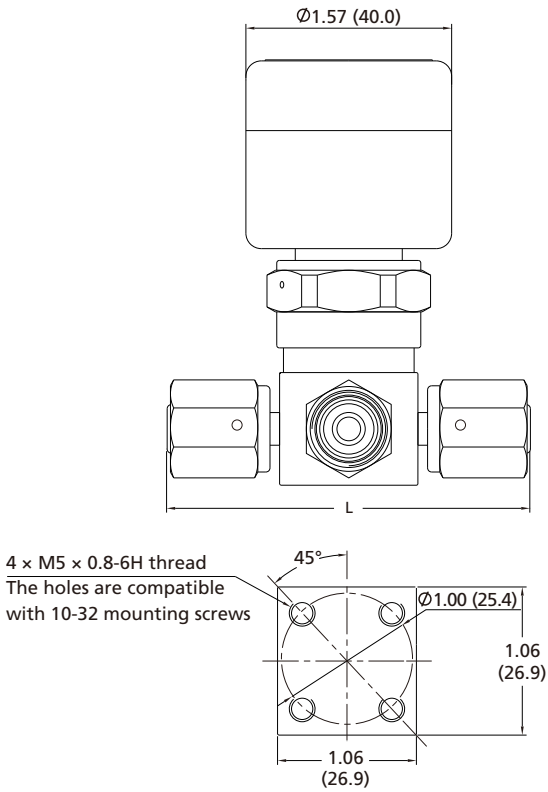
Dimensions

Dimensions, in inches (millimeters), are for reference only.

Manual - Round Handle



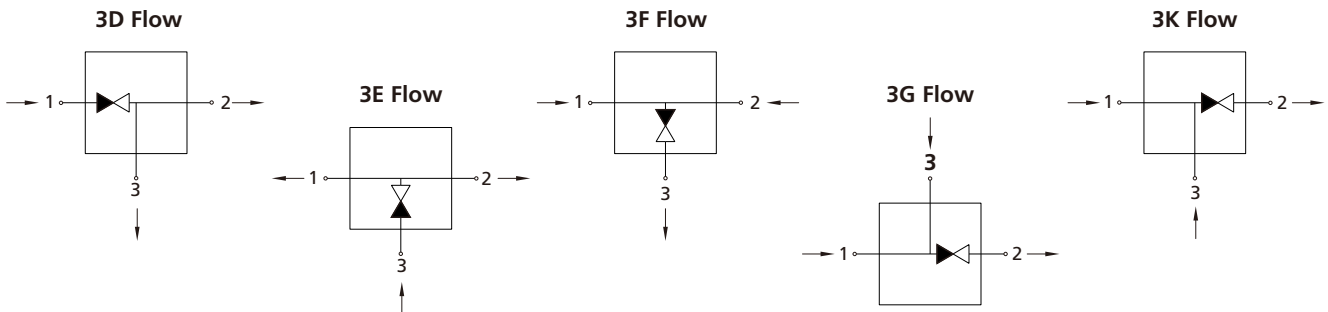
Pneumatic



Basic Ordering Number	Connection Type and Size	Dimensions, in. (mm)		
		C	E	L
SM□□-TB4-4-	1/4" × 0.035" Tube Butt Weld	0.45 (11.4)	0.87 (22.1)	1.74 (44.2)
SM□□-MTB6-4-	6 × 1 mm Tube Butt Weld			
SM□□-FFR4-4-	1/4" Rotatable Female FR Fitting		1.38 (35.1)	2.76 (70.1)
SM□□-RFR4-4-	1/4" Rotatable Male FR Fitting		1.74 (44.2)	3.48 (88.4)

Flow Paths

☉ Flow paths as viewed from the top



Ordering Number Description

SMSS – TB4 – FR4 – FFR4 – 4 – 3G – RAF2MO – CE											
Body Material		Port 1 Type		Port 2/3 Type	Port 2/3 Size	Flow Path	Actuator Type	Seat	Process Specification		
6L	316L SS	TB	Fractional Tube Butt Weld	Same as Port 1	Specified in the same way as Port 1	3D	R	PCTFE	FC-01		
6LV	316L SS VAR	MTB	Metric Tube Butt Weld			3E					
SS	316 SS	TS	Fractional Tube Socket Weld	Port 1 Size	4	3F	C	Polyimide	F2 FC-02		
		FR	Integral Male FR Fitting			3G					
		FFR	Rotatable Female FR Fitting			3K				O	Normally Open Pneumatic
		FL	Fractional Tube Fitting								
		ML	Metric Tube Fitting								
		FO	Male FO Fitting								
						Orifice					
						4	0.16" (4.1 mm)				

Notes:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available. Should you have any questions, please contact FITOK Group or our authorized distributors.
- For the -CE or AX options, the valve conforms to ATEX certification, with "CE" marking and explosion protection "EX" marking. For position sensor selections, the -CE option includes a 3-wire position sensor compliant with CE certification, while the -AX option includes a 2-wire explosion-proof position sensor compliant with ATEX certification. The 2-wire explosion-proof position sensor requires use with an isolating switch amplifier.

Secondary Packed Bellows-Sealed Valves

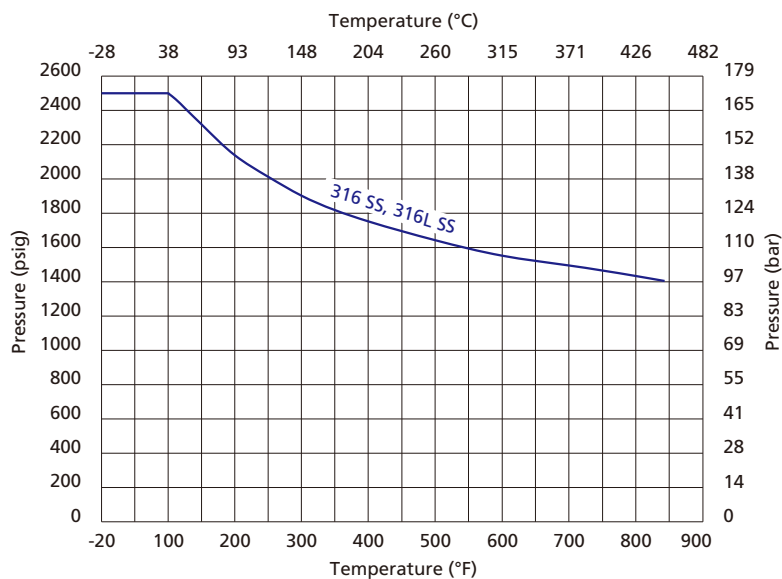
SU Series

Features

- Working pressure up to: 2500 psig (172 bar)
- Working temperature: -20 °F to 842 °F (-28 °C to 450 °C)
- Variety of end connections
- 316 SS body material
- Upper packing provides secondary containment system above the bellows
- Hydraulic-formed multilayer bellows for longer cycle life
- Nonrotating stem tip eliminates galling within the seat area
- Strictly controlled bellows stroke to improve safety and cycle life
- Replaceable bellows and stem tip assembly
- Regulating, conical, and spherical stem tips available
- Panel and bottom mounting available
- Double lock-pins enable steady and durable fastening of the handle
- Handle color options are available
- Every FITOK bellows-sealed valve leak tested with helium at the seat, envelope and all seals (maximum allowable leak rate : 4×10^{-9} std-cm³/s)



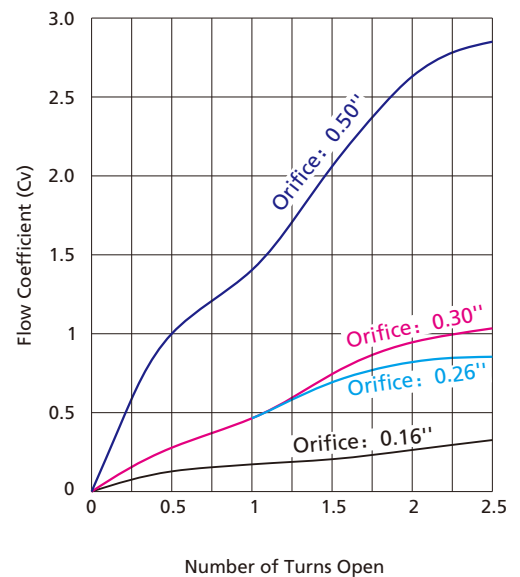
Pressure vs. Temperature



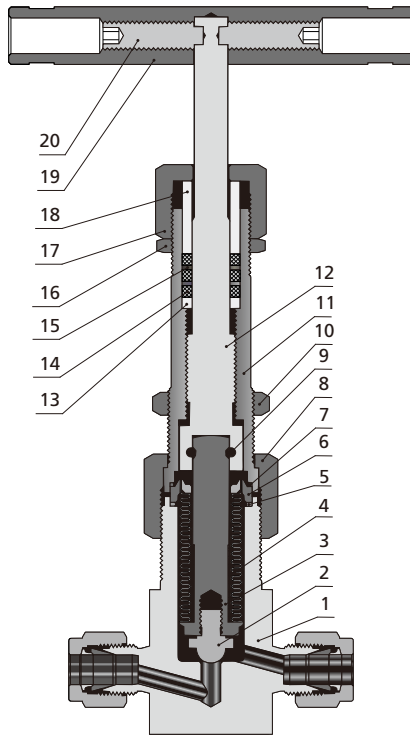
200°F (93°C) max. with PCTFE stem tip (soft tip).

Flow Coefficient vs. Turns Open

Regulating Stem



Standard Materials of Construction



Tip Types

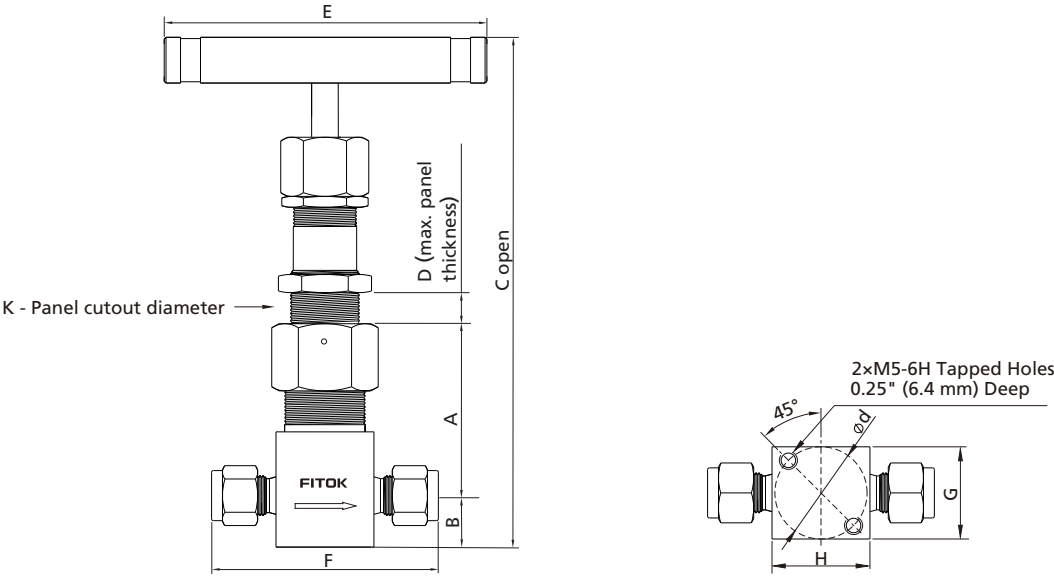


Component			Valve Body Material Grade/ASTM Specification
			316 SS
1	Body		316 SS/A182 or A479
2	Stem Tip	Regulating	316 SS/A479 or Stellite
		Conical	PCTFE/D1430 or 316 SS/A479 or Stellite
		Spherical	Stellite
3	Stem		316 SS/A479
4	Bellows		316L SS/A240
5	Gasket		Sliver-plated 316L SS/A269
6	Weld Ring		316 SS/A479
7	Gasket		Sliver-plated 316L SS/A269
8	Bonnet Nut		316 SS/A479
9	Pin		Stainless steel
10	Panel Mount Nut		Stainless steel
11	Bonnet		316 SS/A479
12	Actuator		440C SS/A479
13	Packing washer		316 SS/A479
14	Packing		Graphite
15	Packing washer		316 SS/A479
16	Lock Nut		Stainless steel
17	Packing Nut		316 SS/A479
18	Gland		316 SS/A479
19	Handle		6061/B210 /Stainless steel
20	Set Screws		Zinc-plated carbon steel

Contact FITOK Group or our authorized distributors for valves of other materials.

Dimensions

Orifice: ≤ 0.30"



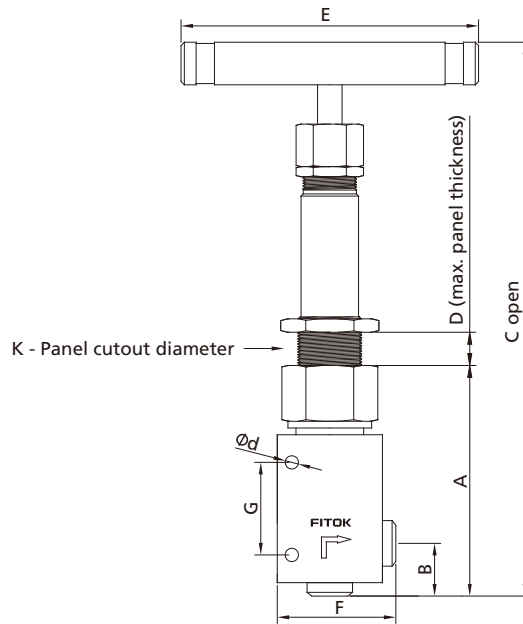
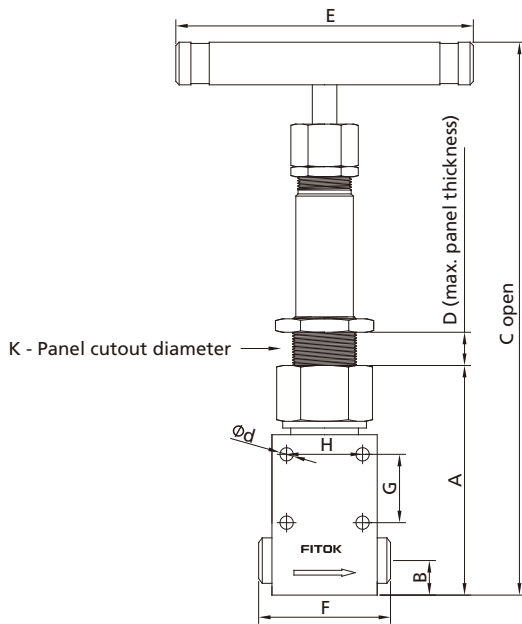
Basic Ordering Number	End Connections		Orifice in. (mm)	Cv	Dimensions, in. (mm)									
	Inlet Size	Outlet Size			A	B	C	D	E	F	G	H	K	Ød
SU□□-FL4-2-	1/4" FITOK		0.16 (4.10)	0.36	1.86 (47.3)	0.54 (14.2)	6.34 (161.0)	0.38 (9.7)	3.50 (88.9)	2.46 (62.5)	1.00 (25.4)	1.07 (27.2)	0.77 (19.5)	1.00 (25.4)
SU□□-FL6-3-	3/8" FITOK		0.26 (6.60)	0.85	1.94 (49.3)	0.50 (12.7)	6.36 (161.5)	0.38 (9.7)	3.50 (88.9)	3.09 (78.5)	1.13 (28.7)	1.57 (40.0)	0.77 (19.5)	1.13 (28.7)
SU□□-FL8-5-	1/2" FITOK		0.30 (7.60)	1.20	1.98 (50.3)	0.50 (12.7)	6.40 (162.5)	0.38 (9.7)	3.50 (88.9)	3.30 (83.8)	1.13 (28.7)	1.57 (40.0)	0.77 (19.5)	1.13 (28.7)
SU□□-ML6-2-	6 mm FITOK		0.16 (4.10)	0.36	1.86 (47.3)	0.56 (14.2)	6.34 (161.0)	0.38 (9.7)	3.50 (88.9)	2.46 (62.5)	1.00 (25.4)	1.05 (26.6)	0.77 (19.5)	1.00 (25.4)
SU□□-ML10-4-	10 mm FITOK		0.28 (7.10)	1.00	1.97 (50.1)	0.50 (12.7)	6.39 (162.3)	0.38 (9.7)	3.50 (88.9)	3.11 (79.0)	1.13 (28.7)	1.57 (40.0)	0.77 (19.5)	1.13 (28.7)
SU□□-ML12-4-	12 mm FITOK		0.28 (7.10)	1.00	1.97 (50.1)	0.50 (12.7)	6.39 (162.3)	0.38 (9.7)	3.50 (88.9)	3.30 (83.8)	1.13 (28.7)	1.57 (40.0)	0.77 (19.5)	1.13 (28.7)
SU□□-TS4-2-	1/4" Tube Socket Weld		0.16 (4.10)	0.36	1.86 (47.3)	0.56 (14.2)	6.34 (161.0)	0.38 (9.7)	3.50 (88.9)	1.68 (42.7)	1.00 (25.4)	1.00 (25.4)	0.77 (19.5)	1.00 (25.4)
SU□□-TS6-4-	3/8" Tube Socket Weld		0.28 (7.10)	1.00	1.97 (50.1)	0.50 (12.7)	6.39 (162.3)	0.38 (9.7)	3.50 (88.9)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	0.77 (19.5)	1.13 (28.7)
SU□□-TS8-5-	1/2" Tube Socket Weld		0.30 (7.60)	1.20	1.98 (50.3)	0.50 (12.7)	6.40 (162.5)	0.38 (9.7)	3.50 (88.9)	2.27 (57.7)	1.13 (28.7)	1.52 (38.6)	0.77 (19.5)	1.13 (28.7)
SU□□-FFR4-2-	1/4" Female FR		0.16 (4.10)	0.36	1.86 (47.3)	0.56 (14.2)	6.34 (161.0)	0.38 (9.7)	3.50 (88.9)	2.76 (70.1)	1.00 (25.4)	1.00 (25.4)	0.77 (19.5)	1.00 (25.4)
SU□□-FFR8-5-	1/2" Female FR		0.30 (7.60)	1.20	1.98 (50.3)	0.50 (12.7)	6.40 (162.5)	0.38 (9.7)	3.50 (88.9)	3.12 (79.2)	1.13 (28.7)	1.52 (38.6)	0.77 (19.5)	1.13 (28.7)
SU□□-FR4-2-	1/4" Male FR		0.16 (4.10)	0.36	1.86 (47.3)	0.56 (14.2)	6.34 (161.0)	0.38 (9.7)	3.50 (88.9)	2.24 (56.9)	1.00 (25.4)	1.00 (25.4)	0.77 (19.5)	1.00 (25.4)
SU□□-FR8-5-	1/2" Male FR		0.30 (7.60)	1.20	1.98 (50.3)	0.50 (12.7)	6.40 (162.5)	0.38 (9.7)	3.50 (88.9)	3.00 (76.2)	1.13 (28.7)	1.52 (38.6)	0.77 (19.5)	1.13 (28.7)

1. FITOK means FITOK double ferrule tube fittings, FR means metal gasket seal fittings.
2. Valve dimensions of FITOK tube fittings in port types listed are dimensions when nuts are finger-tightened. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.
3. The sizes and types listed are standard. Other sizes and types are available upon request. For special sizes and types, refer to ordering information.

Dimensions

Orifice: 0.50"

Orifice: 0.61"



Basic Ordering Number	End Connections		Orifice in. (mm)	Cv	Dimensions, in. (mm)									
	Inlet Size	Outlet Size			A	B	C	D	E	F	G	H	K	Ød
SU□□-TS12-8-	3/4" Tube Socket Weld		0.50 (12.7)	3.10	5.45 (138.5)	1.00 (25.4)	11.60 (295)	0.59 (14.9)	5.00 (127)	2.44 (62.0)	1.25 (31.8)	1.46 (37.0)	1.2 (30.5)	0.27 (6.9)
SU□□-PB12-8-	3/4×SCH80 Pipe Butt Weld		0.50 (12.7)	3.10	5.45 (138.5)	1.00 (25.4)	11.60 (295)	0.59 (14.9)	5.00 (127)	2.44 (62.0)	1.25 (31.8)	1.46 (37.0)	1.2 (30.5)	0.27 (6.9)
SU□□-TS12-8A-	3/4" Tube Socket Weld		0.61 (15.5)	5.30	5.45 (138.5)	1.44 (36.6)	11.60 (295)	0.59 (14.9)	5.00 (127)	2.49 (63.2)	1.60 (40.6)	—	1.2 (30.5)	0.27 (6.9)
Su□□-PB12-8A-	3/4×SCH80 Pipe Butt Weld		0.61 (15.5)	5.30	5.45 (138.5)	1.44 (36.6)	11.60 (295)	0.59 (14.9)	5.00 (127)	2.49 (63.2)	1.60 (40.6)	—	1.2 (30.5)	0.27 (6.9)
SU□□-TB16-8A-	1×0.134" Tube Butt Weld		0.61 (15.5)	5.30	5.45 (138.5)	1.44 (36.6)	11.60 (295)	0.59 (14.9)	5.00 (127)	2.49 (63.2)	1.60 (40.6)	—	1.2 (30.5)	0.27 (6.9)

Fittings

Valves

Regulators

Filters

Tubing

Integrated Systems

Other Products

Technical Information

Pneumatic Actuators



Features

- Low actuation pressure
- Opens and closes quickly and reliably
- Aluminum and stainless steel components

Actuation Modes

- Normally closed—air opens, spring closes
- Normally open—air closes, spring opens

Technical Data

Orifice	Working Temperature °F (°C)	Pressure Rating psig (bar)
≤0.30"	-20~200 (-28~93)	80~94 (5.5~6.5)
0.50"		87~116 (6~8)

For valve ratings, please refer to Pressure VS. Temperature on page V-147.

Materials of Construction

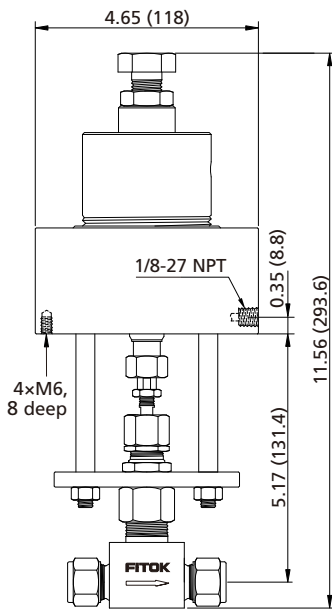
Component	Material
Housing	Anodized Aluminium
Stem Tip	Stellite
Bracket	Stainless Steel

For valve components, refer to "Standard Materials of Construction" on page V-148.

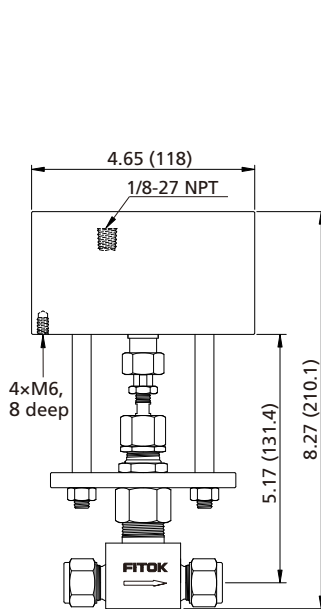
Dimensions

Dimensions are for reference only and subject to change

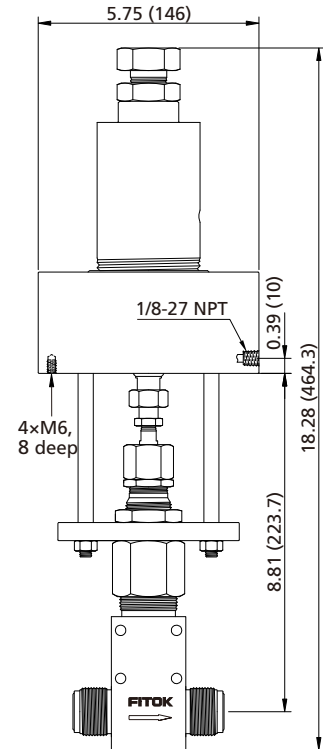
Normally closed, orifice $\leq 0.30"$



Normally open, orifice $\leq 0.30"$



Normally closed, orifice 0.50"



Ordering Information

To order valves with pneumatic actuators, add -C or -O to the valve ordering number. C designates normally closed models; O designates normally open models.

SU□□-□□-2/3/4/5-C/O

SU□□-□□-8-C

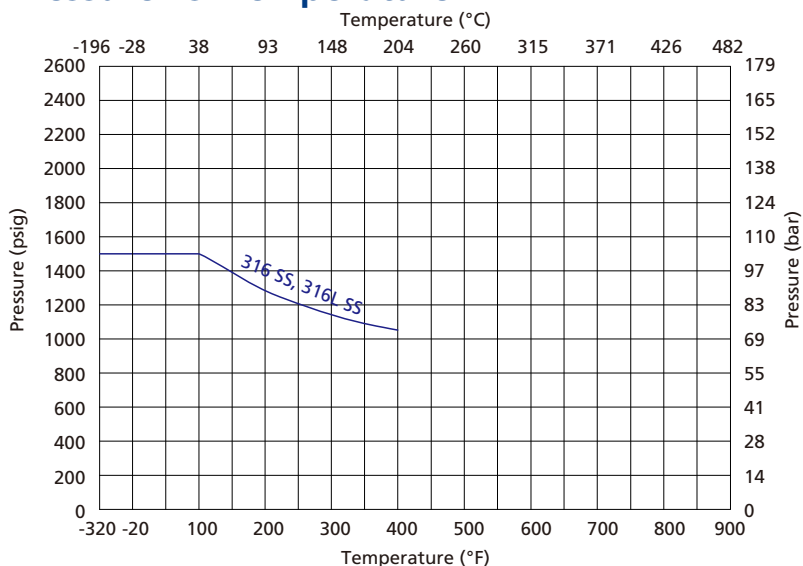
Low Temperature Applications

SU series bellows-sealed valves for temperatures ranging from -320°F to 400°F (-196°C to 204°C) are available, featuring PTFE packing. To order, please add -LT to the valve ordering number.

Example: SUSS-FL4-5-LT

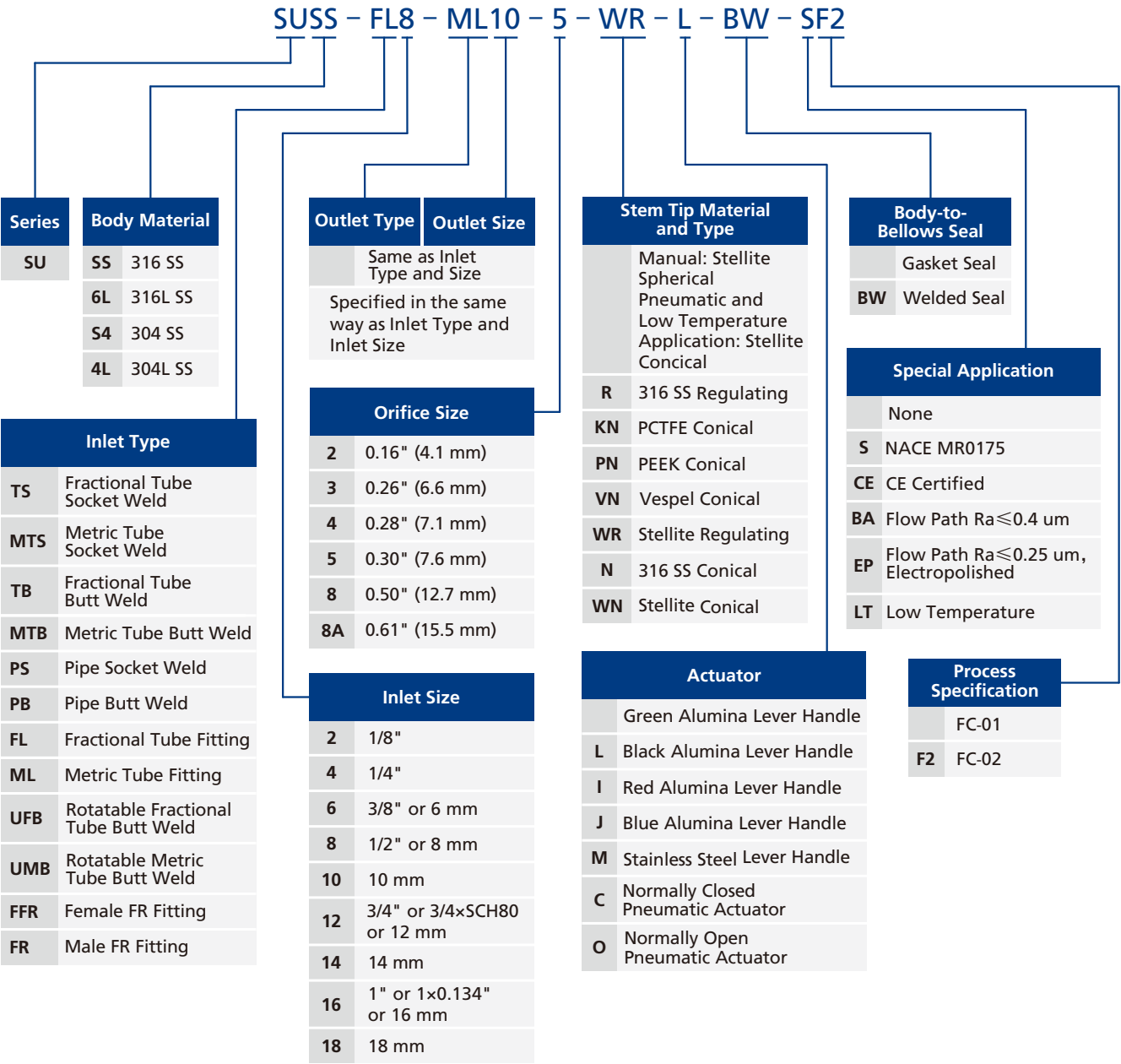
SUSS-FL12-8-LT

Pressure vs. Temperature



Temperature rating is limited to 200 °F (93 °C) max. with PCTFE stem tip (soft tip).

Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

1. Process Specification:
FC-01: Standard cleaning and packaging for general industrial procedures.
FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement of ASTM G93 Level C.

2. CE certification is available. For more information, please contact FITOK group or our authorized distributors.

3. LT: Apply to low temperature applications with PTFE auxiliary packing, working temperature -320~400 °F (-196~204 °C).

High Pressure Pneumatic Bellows-Sealed Valves

SVH Series

Introduction

SVH Series High Pressure Pneumatic Bellows-Sealed Valves are suitable for high purity and ultra high purity applications. Replacing packing with bellows as the seal effectively improves valve cleanliness and extends service life. Additionally, wear parts are easy to replace.

Features

- ⦿ Packless valves with all-metal seal to atmosphere
- ⦿ Compact designed body with minimal dead space
- ⦿ 316L SS precision-formed bellows for long cycle life
- ⦿ PCTFE stem tip material with remarkable chemical and thermal resistance
- ⦿ Normally closed and normally open pneumatic actuator optional
- ⦿ Bottom mounting
- ⦿ Normally open and normally closed position sensors optional

Technical Data

Ports Size		1/4" to 3/8" or 6 mm to 8 mm
Flow Coefficient (Cv)		0.30
Orifice Size		0.15 in. (3.8 mm)
Max. Working Pressure		3500 psig (241 bar)
Temperature		PCTFE: -40 ~ 150 °F (-40 ~ 65 °C) Polyimide: -40 ~ 400 °F (-40 ~ 204 °C)
Leak Rate (Helium)	Internal	$\leq 4 \times 10^{-9}$ std·cm ³ /s
	External	$\leq 4 \times 10^{-9}$ std·cm ³ /s

Flow Data

Air @ 70 °F (21 °C)
Water @ 60 °F (16 °C)

Pressure Drop to Atmosphere psig (bar)	Air (l/min)	Water (l/min)
10 (0.68)	96	3.6
50 (3.4)	250	7.9
100 (6.8)	450	11.0

Process Specification

Item	Process Specification	Standard Cleaning and Packaging Process (FC-01) Special Cleaning and Packaging Process (FC-02)	Ultra High Purity Process (FC-03)
Material		316 SS, 316L SS	316L SS
Wetted Surface Roughness		Ra 20 μin. (0.5 μm)	Ra 10 μin. (0.25 μm)
Polishing Process		Machine finished	Electropolished

Note: Refer to page P-01 for a detailed description of Process Specification.



Fittings

Valves

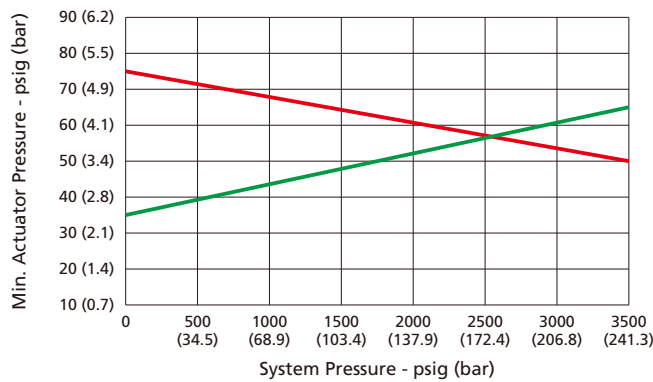
Regulators

Filters

Tubing

Integrated
SystemsOther
ProductsTechnical
Information

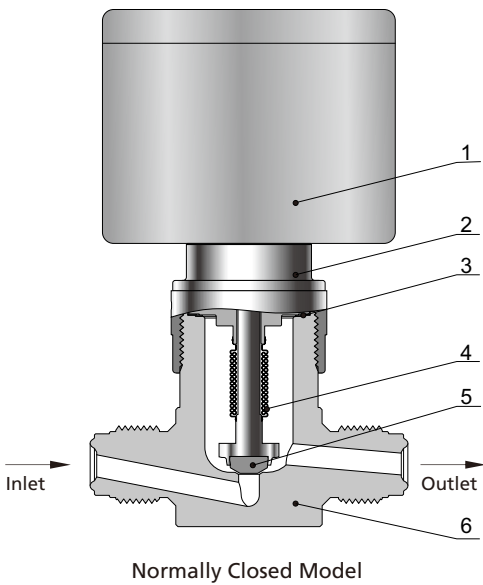
Pneumatic Actuator Performance



— Normally Open
— Normally Closed

Note: To ensure optimal valve performance, the pressure for normally open pneumatic actuators shall be maintained above 35 psig (2.4 bar), as indicated in the chart.

Major Materials of Construction



Item	Component	Material/Specification
1	Pneumatic Actuator	Aluminum
2	Bonnet Nut	304 SS/ASTM A479
3	Gasket	PTFE-Coated 316L SS/A240
4	Bellows	316L SS/ASTM A269
5	Seat	PCTFE/ASTM D1430 or Polyimide
6	Body	316 SS or 316L SS

Pneumatic Actuators

- ⦿ Normally open, "N.O." marked on the top of the actuator
- ⦿ Normally closed, "N.C." marked on the top of the actuator



Position Sensors

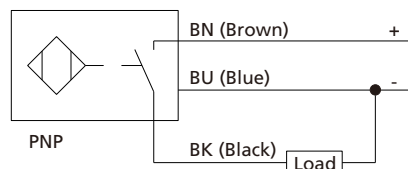
Transmit a signal to an electrical device indicating the open and closed position of pneumatically actuated valves

Technical Information

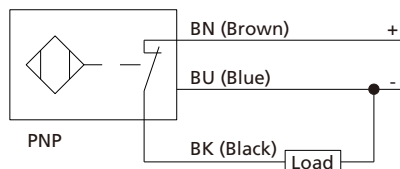
Output	3-wire V (dc), PNP
Output Function	Normally open or normally closed
Voltage	10 ~ 30 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Wiring Diagram

Normally Open Position Sensor



Normally Closed Position Sensor



Notes:

1. For normally closed pneumatically actuated valves, when fitted with normally open sensors, the sensors transmit signals with indicators illuminated when the valves are open. Conversely, when fitted with normally closed sensors, the sensors transmit signals with indicators illuminated when the valves are closed.
2. For normally open pneumatically actuated valves, when fitted with normally open sensors, the sensors transmit signals with indicators illuminated when the valves are closed. Conversely, when fitted with normally closed sensors, the sensors transmit signals with indicators illuminated when the valves are open.

Explosion-proof Position Sensors

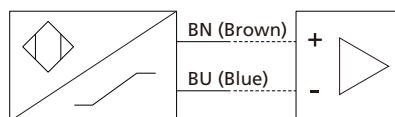
Transmit a signal to an electrical device, indicating the open and closed positions of pneumatically actuated valves.

Equipment Group II under ATEX Certification. The output complies with DIN EN 6094 7-5-6 (NAMUR) and the sensor should be used with an isolation amplifier.

Technical Information

Output	2 Wires DC
Voltage	8.2 V (dc)
Working Temperature	-13 ~ 158 °F (-25 ~ 70 °C)

Wiring Diagram



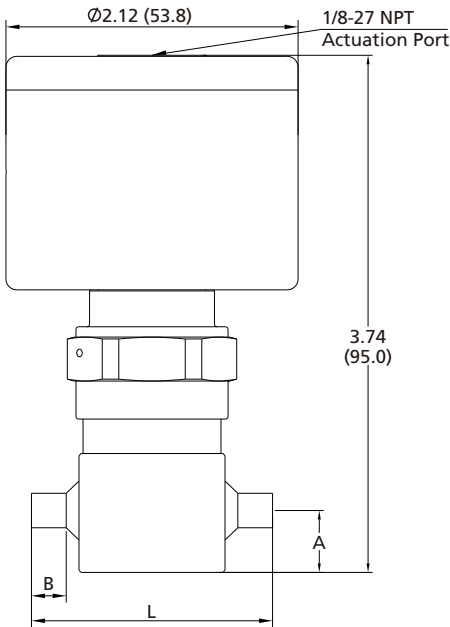
Dimensions and Ordering Information

Straight Type

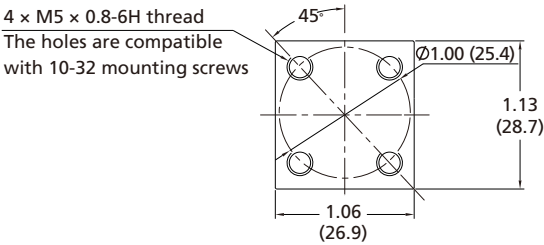
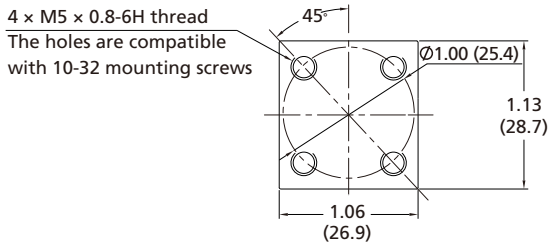
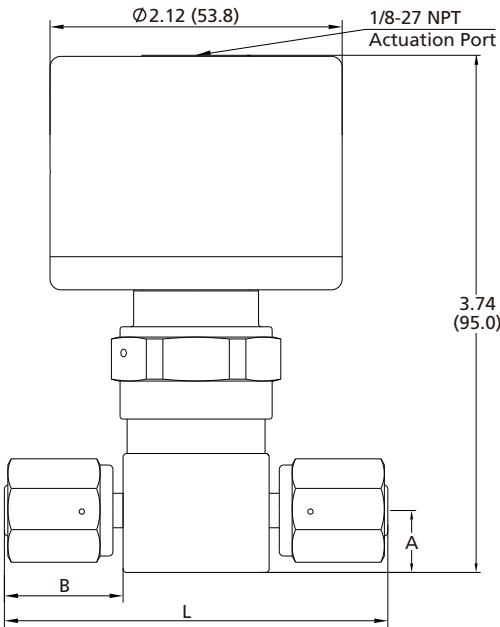
Dimensions

Dimensions, in inches (millimeters), are for reference only.

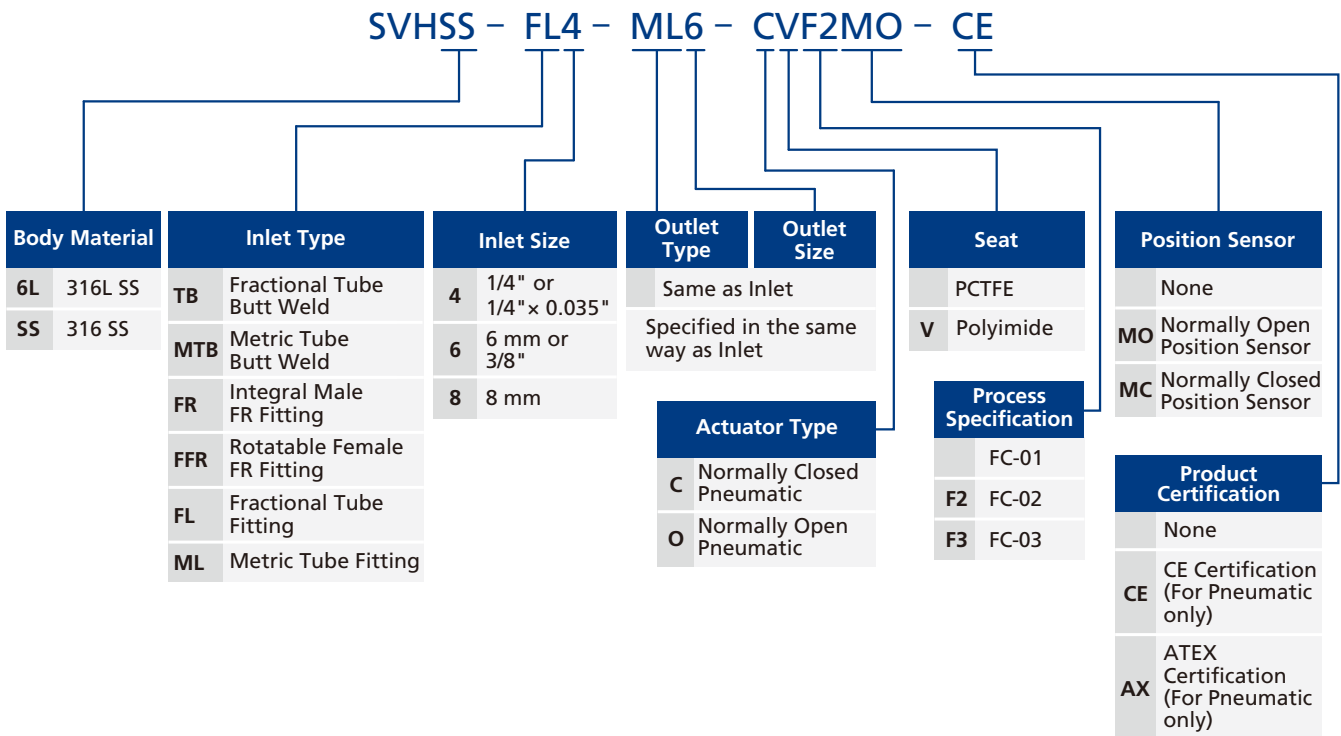
Normally Closed



Normally Open



Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)		
		A	B	L
SVH□□-TB4-	1/4"× 0.035" Tube Butt Weld	0.45 (11.4)	0.25 (6.4)	1.75 (44.4)
SVH□□-FFR4-	1/4" Rotatable Female FR Fitting		0.85 (21.6)	2.76 (70.1)
SVH□□-FR4-	1/4" Integral Male FR Fitting		0.62 (15.7)	2.30 (58.4)
SVH□□-FL4-	1/4" FITOK Tube Fitting		0.70 (17.8)	2.46 (62.5)
SVH□□-FL6-	3/8" FITOK Tube Fitting		0.76 (19.3)	2.58 (65.5)
SVH□□-ML6-	6 mm FITOK Tube Fitting		0.70 (17.9)	2.47 (62.8)

[illegible]

Notes:

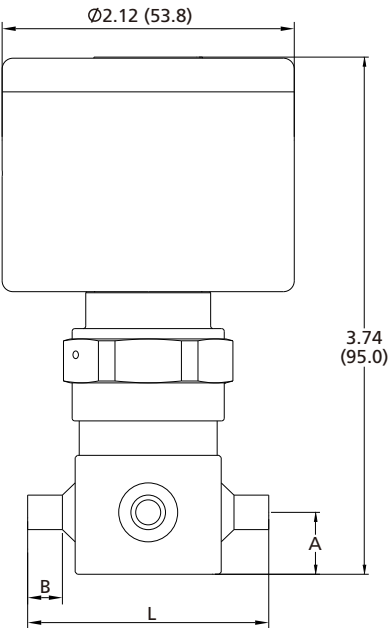
1. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available. Should you have any questions, please contact FITOK Group or our authorized distributors.
2. For the -CE or AX options, the valve conforms to ATEX certification, with "CE" marking and explosion protection "EX" marking. For position sensor selections, the -CE option includes a 3-wire position sensor compliant with CE certification, while the -AX option includes a 2-wire explosion-proof position sensor compliant with ATEX certification. The 2-wire explosion-proof position sensor requires use with an isolating switch amplifier.

Branch Type

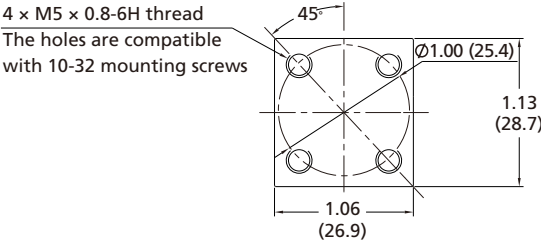
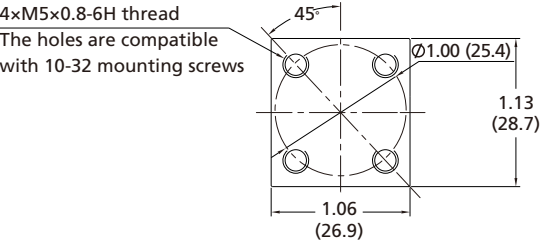
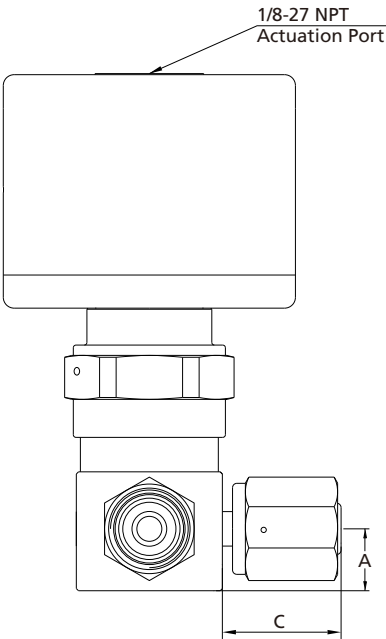
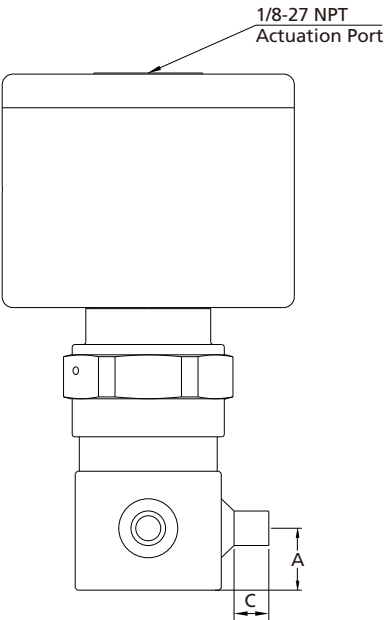
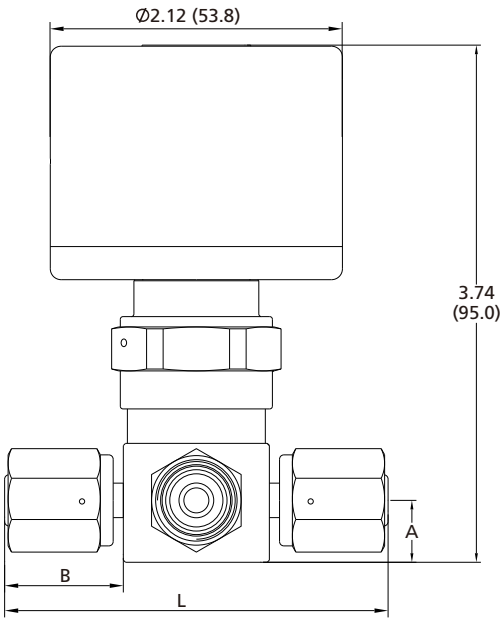
Dimensions

Dimensions, in inches (millimeters), are for reference only.

Normally Closed



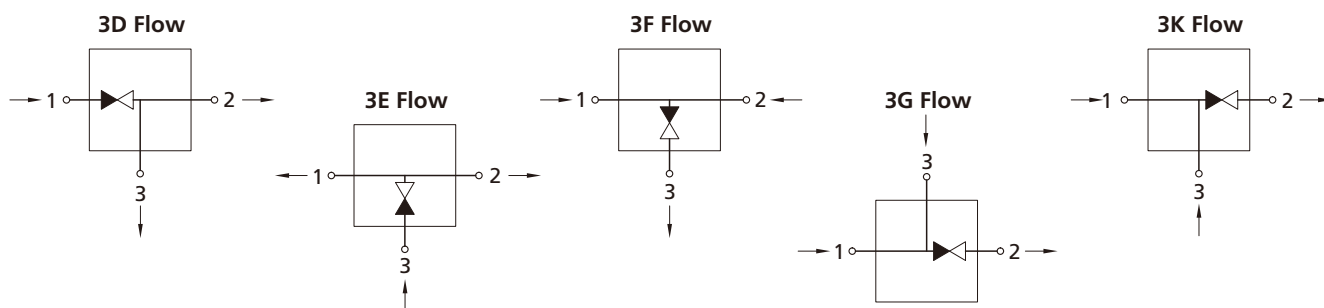
Normally Open



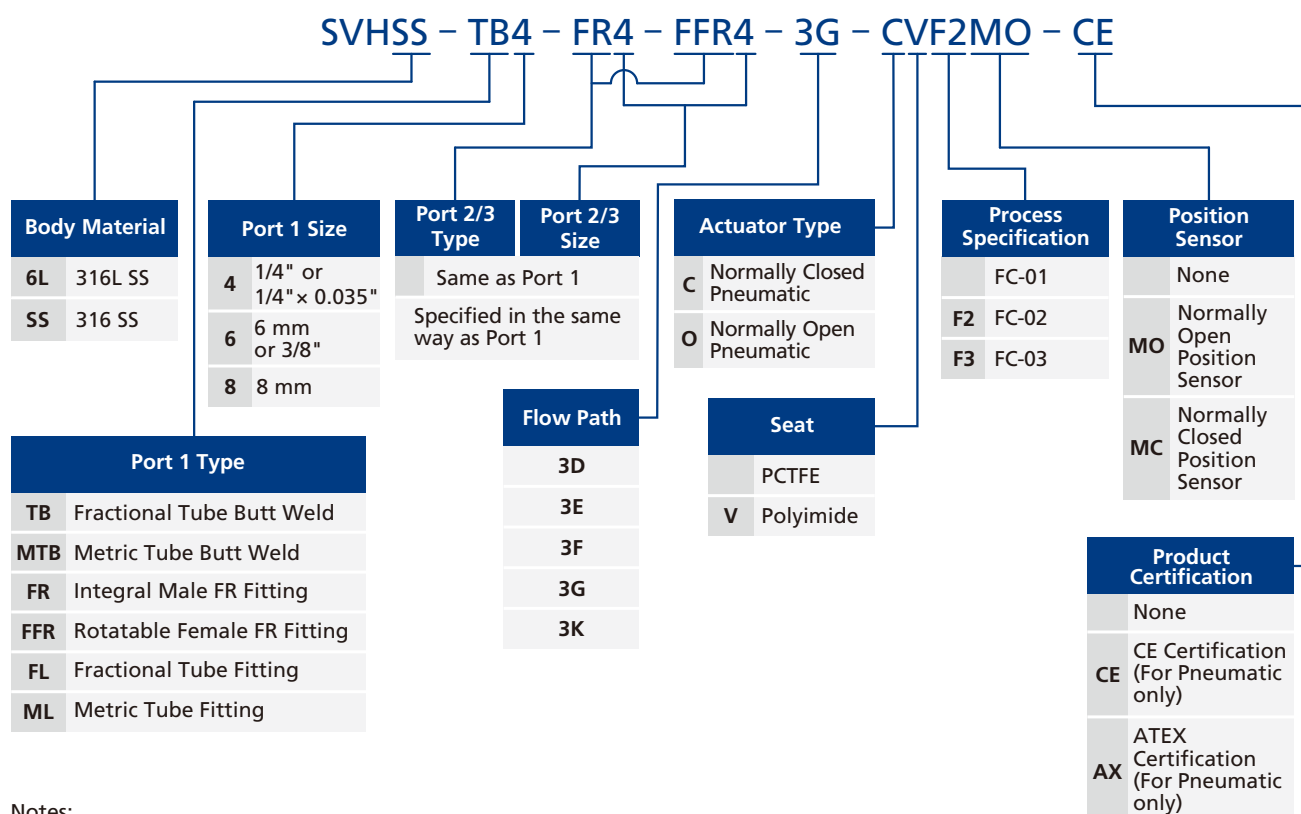
Basic Ordering Number	Connection Type and Size	Dimensions in. (mm)			
		A	B	C	L
SVH□□-TB4-	1/4" × 0.035" Tube Butt Weld	0.44 (11.2)	0.25 (6.4)	0.25 (6.4)	1.75 (44.4)
SVH□□-FFR4-	1/4" Rotatable Female FR Fitting		0.85 (21.6)	0.85 (21.6)	2.76 (70.1)
SVH□□-FR4-	1/4" Integral Male FR Fitting		0.62 (15.7)	0.62 (15.7)	2.30 (58.4)
SVH□□-FL4-	1/4" FITOK Tube Fitting		0.70 (17.8)	0.70 (17.8)	2.46 (62.5)
SVH□□-FL6-	3/8" FITOK Tube Fitting		0.76 (19.3)	0.76 (19.3)	2.58 (65.5)
SVH□□-ML6-	6 mm FITOK Tube Fitting		0.70 (17.8)	0.70 (17.9)	2.47 (62.8)

Flow Paths

☉ Flow paths as viewed from the top



Ordering Number Description



Notes:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available. Should you have any questions, please contact FITOK Group or our authorized distributors.
- For the -CE or AX options, the valve conforms to ATEX certification, with "CE" marking and explosion protection "EX" marking. For position sensor selections, the -CE option includes a 3-wire position sensor compliant with CE certification, while the -AX option includes a 2-wire explosion-proof position sensor compliant with ATEX certification. The 2-wire explosion-proof position sensor requires use with an isolating switch amplifier.