



ITT

Pure-Flo®

Automation & Control



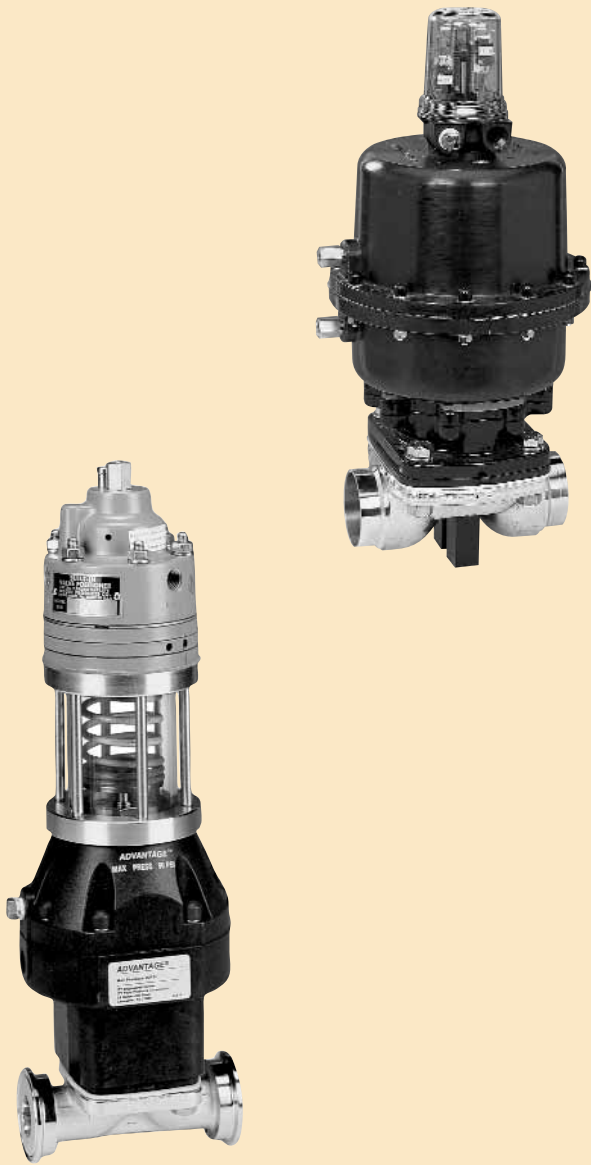
Engineered for life

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Introduction

Constantly increasing demands to meet regulatory, quality and production efficiency requirements has driven the Biotech and Pharmaceutical industries to rely heavily on process control systems. These systems must provide reliable and accurate feedback from the manufacturing process.

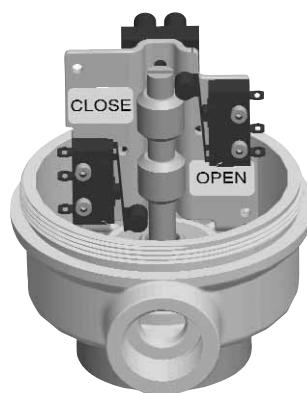
Diaphragm valves have unique operating characteristics that must be considered when utilizing feedback and control apparatus. The Pure-Flo selection of switches and positioning products are engineered and tested to provide consistent and reliable performance on Pure-Flo valves.

The worldwide network of Pure-Flo technical resources is available to assist in the specification and application of the complete line of Pure-Flo automation and control products.

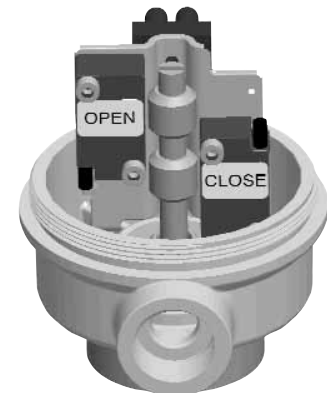
Value Switch Package (VSP)

The VSP is a switch package engineered with cost effectiveness, simplicity and flexibility in mind. The VSP maintains a small dimensional envelope for process piping installations where space is at a premium. The VSP is offered with a complete range of mechanical switches and proximity sensors to meet your electrical and control system specifications.

The VSP is a perfect compliment to both the Advantage® and Advantage® Piston Actuator lines of pneumatic actuation.






Mechanical



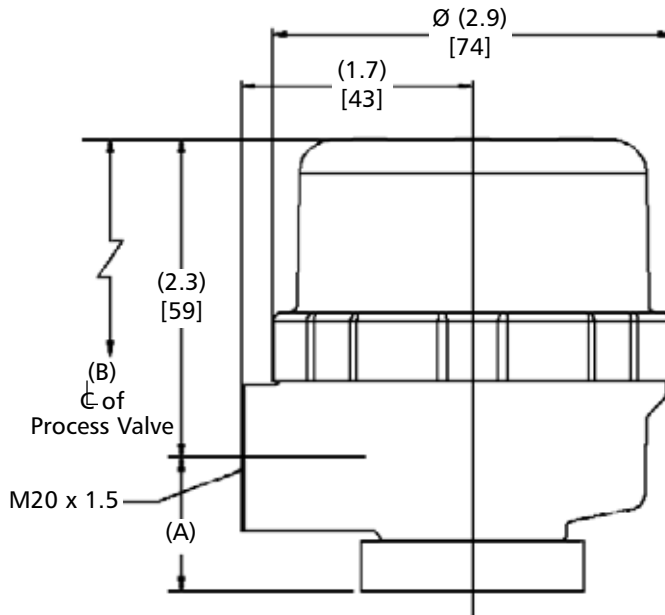
Proximity

Switch Package VSP				
Order Code	Switch Type	Switch Contact/ Output	Amperage	Voltage
VSPS48	Mechanical	Silver SPDT	6A	48 VAC/DC
VSPG30	Mechanical	Gold SPDT	100 mA	30VAC/DC
VSPZ	Proximity	2 Wire "Z"	200 mA	36 VDC
VSPN	Proximity	2 Wire Namur	1 mA	30 VDC
VSPPP	Proximity	3 Wire PNP	200 mA	36 VDC

ATEX CERTIFICATION

Order Code	Switch Certification	Assembly Certification
VSPS48	Simple Apparatus	 II 2 G T6 Ta: +25 to +60°C
VSPG30		
VSPN	 II 1 G EEx ia IIB T6 Ta: -20 to +60°C  II 2 G EEx ia IIC T6 Ta: -20 to +70°C	Must be used with an approved barrier.

VSPG30 and VSPN (with barrier) are suitable for hazardous and explosive applications. VSPN uses Intrinsically Safe sensor technology. VSPS48 is not recommended for low current applications.



Valve Size	A		B			
			APA Actuator		Advantage Actuator	
	in	mm	in	mm	in	mm
BT	1.00	25.4	5.00	12.70	5.04	12.80
0.5	1.00	25.4	5.50	13.98	5.52	14.02
0.75	1.00	25.4	6.34	16.10	6.59	16.74
1	1.00	25.4	6.90	17.52	6.99	17.75
1.5	1.50	38.1	11.03	28.01	11.18	28.40
2	1.50	38.1	11.57	29.39	11.68	29.67

VSP Specifications

Size Range

1/4"-2" (DN 8-50)

Max External Temperature

140°F (60°C)

Housing Material

Housing: Polyamide, FDA compliant

Cover: Polysulfone, FDA compliant

Switch Selection

- Mechanical
- Proximity

Conduit Ports

One M20 conduit port, located radially at any position, 360° (1/2"-NPT adapter available).

Product Ratings

Enclosure:

NEMA 4X, IP66

Class I, Div 1, Groups A-G:

VSPN with amplifier

Class I, Div 2, Group A-G:

VSPZ

VSPPP

Intrinsic Safety (FM and cCSAus, ATEX approved):

VSPN with barrier/amplifier

Switch Certifications

VSPN: CE, cCSAus, FM, ATEX

VSPPP Sensor: CE, cULus

VSPZ: CE, cULus

VSPS48, VSPG30: cULus

Terminal Strip: CE, cULus

Wire Gauge: 12 Gauge max. input

Note: VSP is not autoclavable

Switch Package SP2

Size Range

1/4"-4" (DN 8-100)

Temperature

150°F (65°C)

Housing Material

Upper and lower cover:
Polyarylsulfone (PAS) Thermoplastic
FDA compliant. Maximum temperature is 300°F (149°C).

Switch Selection (See Chart)

- Mechanical
- Proximity

Conduit Ports

- Two 1/2" NPT conduit ports.
- Package can be rotated at 45° increments

Electrical Rating

Nema: Nema 4x

Ingress Protection Rating: IP66

Class I, Div 1, Groups A-G:
SP2N with amplifier

Class I, Div 2, Groups A-G:
SP2Z
SP2P
SP2NP

Intrinsically Safety
(FM & CSA Approved):
SP2N with amplifier

UL and CSA Approved: Switches
and Terminal Strip

Hermetically Sealed: Proximity
Switches

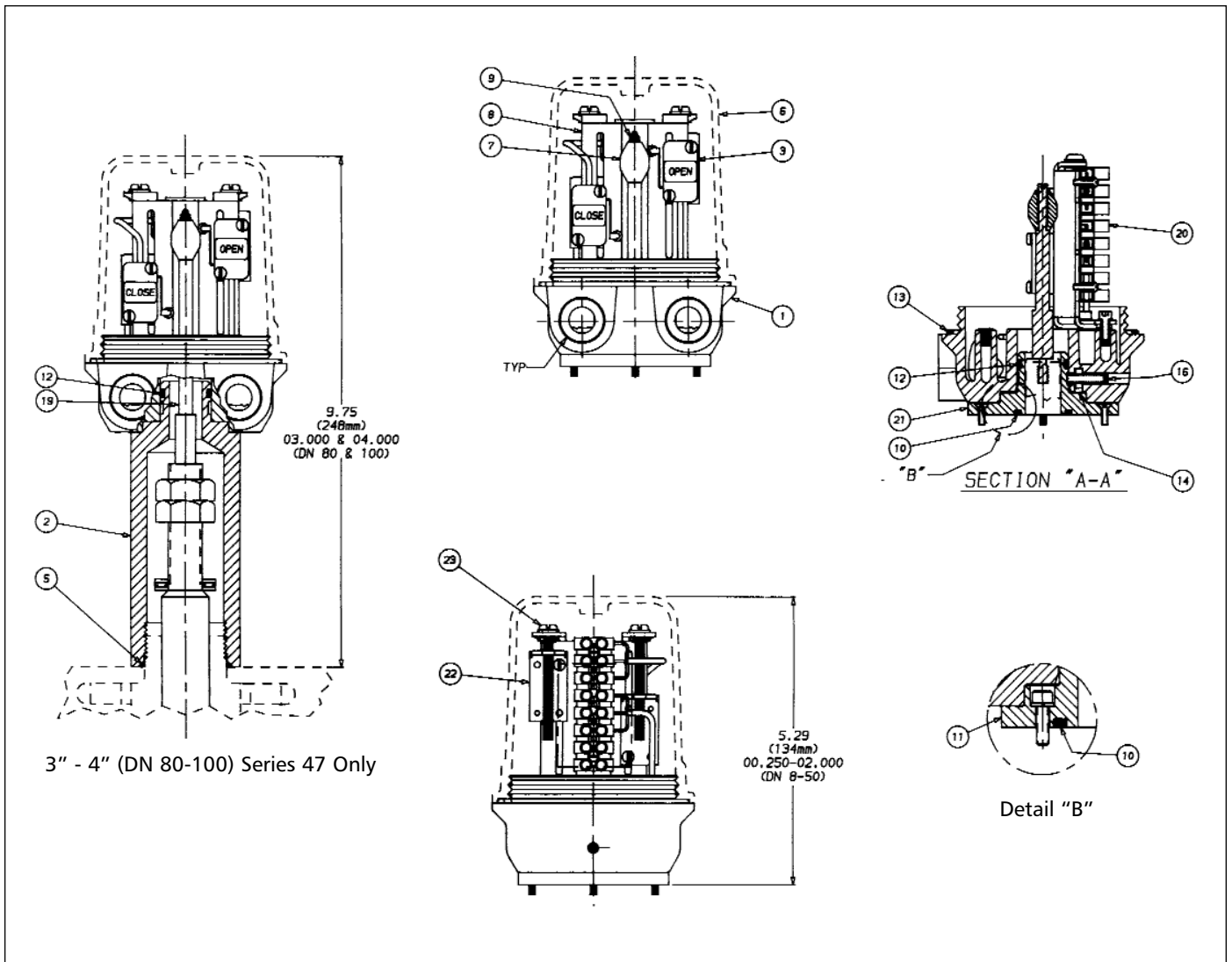
Housing Flammability Rating:
V0

Wire Gauge:
12 Gauge Max
Cenelec Zones 0, 1, 2
SP2N with amplifier

Note: SP2 is not autoclavable.



Switch Package SP2				
Order Code	Switch Type	Switch Contact/ Output	Amperage	Voltage
SP2S	Mechanical	Silver	10 A	250 VAC
			250 mA	250 VDC
SP2G	Mechanical	Gold	1 A	125 VAC
SP2Z	Proximity	2 Wire "Z"	100 mA	30 VDC
SP2N	Proximity	2 Wire Namur	3 mA	24 VDC
SP2P	Proximity	3 Wire PNP	100 mA	30 VDC
SP2NP	Proximity	3 Wire NPN	100 mA	30 VDC



List of Parts

Item	Description	Material	Quantity
1'	Bonnet	Polyarylsulfone	1
1	Housing—Lower	PAS	1
2	Adapter—Switch	Stn., Stl. A-582, TY 303	1
3	Switch	—	2
4	Insulator—Switch	Nomex Aramid	1
5	"O" Ring, #128	Buna N, FDA Compliant	1
6	Housing—Upper	PAS	1
7	Actuator—Switch	Alum, B-211-6061-T6	1
8	Bracket—Switch Mtg	Stn., Stl., A-240, Series 300	1
9	Rod—Switch Actuator	Stn., Stl., A-582, TY 303	1
10	"O" Ring, #117	Buna N, FDA Compliant	1
11	Adapter—Switch	PAS	1
12	"O" Ring, #116	Buna N, FDA Compliant	1
13	"O" Ring, #152	Buna N, FDA Compliant	1
14	Nut—Square	Stn., Stl., 18-8	1
16	Screw—Hex Soc. Set	Stn., Stl., 18-8	1
19	Rod—Switch Actuator	Stn., Stl., A-582, TY 303	1
20	Terminal Strip	—	1
21	Adapter—Switch	PAS	1
22	Bracket—Adjusting	Stn., Stl., A-240, Series 300	2
23	Screw—Modified	Stn., Stl., 18-8	2

Switch Package SP3

Size Range

1/4"-2" (DN 8-50)

Temperature

140°F (60°C)

Housing Material

Housing: Polyamide, FDA compliant.

Cover: Polysulfone, FDA compliant.
Maximum temperature is 140°F (60°C).

Switch Selection

- Mechanical
- Proximity

Conduit Ports

One 1/2" NPT conduit port, located radially at any position, 360°.

Electrical Rating

Nema:

Nema 4x

Ingress Protection Rating:

IP65

Class I, Div 1, Groups A-G:

SP3N with amplifier

Class I, Div 2, Group A-G:

SP3Z

SP3P

SP3NP

Intrinsic Safety

(FM and CSA approved):

SP3N with amplifier

UL and CSA Approved:

Switches and terminal strip

Hermetically Sealed: Proximity

Switches.

Wire Gauge:

16 Gauge

Cenelec Zones 0, 1, 2:

SP3N with amplifier

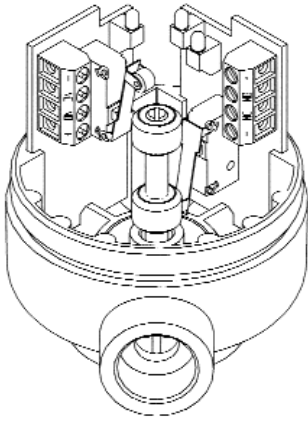
Note: SP3.0 is not autoclavable.

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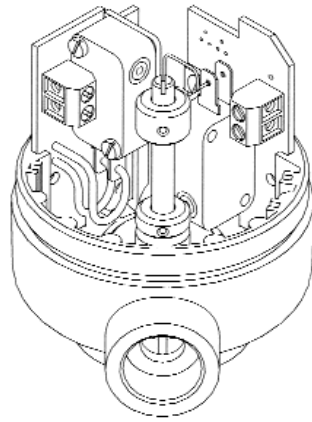


Switch Package SP3

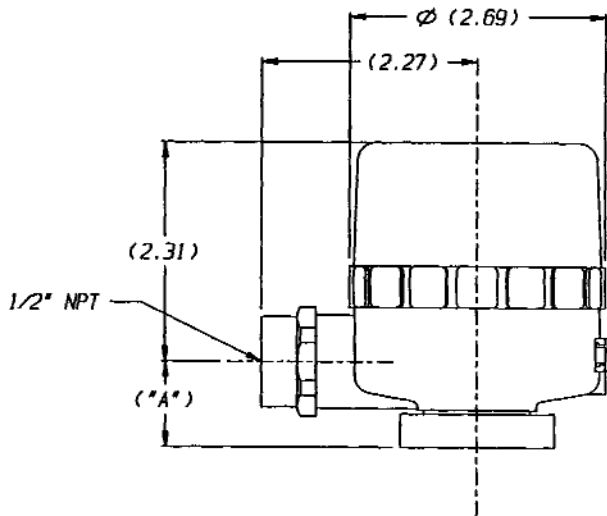
Order Code	Switch Type	Switch Contact/ Output	Amperage	Voltage
SP3S240	Mechanical	Silver	10 A	230 VAC/DC
SP3S110	Mechanical	Silver	10 A	110 VAC/DC
SP3S48	Mechanical	Silver	12 A	48 VAC/DC
SP3G	Mechanical	Gold	100 mA	30 VAC/DC
SP3Z	Proximity	2 Wire "Z"	100 mA	30 VDC
SP3N	Proximity	2 Wire Namur	3 mA	24 VDC
SP3P	Proximity	3 Wire PNP	200 mA	30 VDC
SP3NP	Proximity	3 Wire NPN	200 mA	30 VDC



Mechanical



Proximity



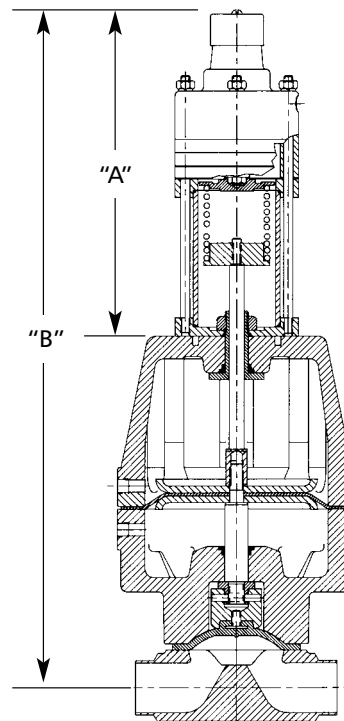
Actuator Size	("A")
Bio-Tek - 1.0	(0.98)
1.5 & 2.0	(1.46)

Pneumatic Positioner

For throttling and flow control applications, the direct mounted Moore Positioner with Advantage[®] Actuator is a compact and reliable solution.

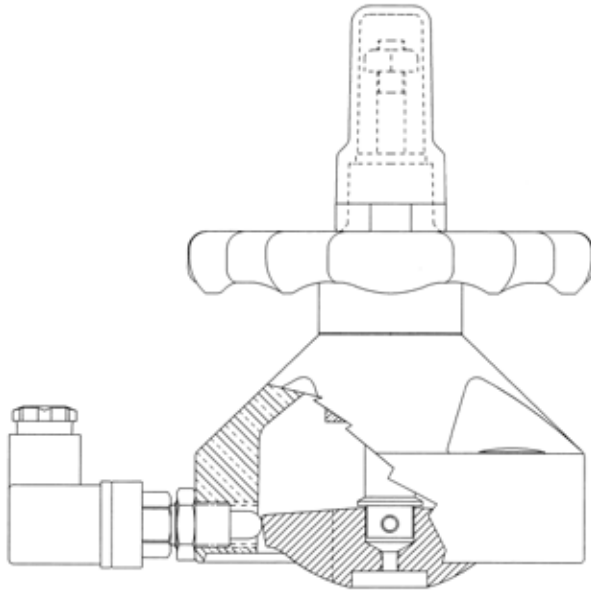
Features:

- Pneumatic Moore 73-series positioner
- Operates on 3-15 psi (0.2-1.0 bar)
- A transducer can be adapted to handle an I/P conversion from a typical 4-20 mA
- Close-coupled design allows for direct air loading from the Moore positioner to the upper actuator chamber in Air to Open - Air to Close and Fail Open actuators
- The transparent tubing and red spring disc allows for visual position verification

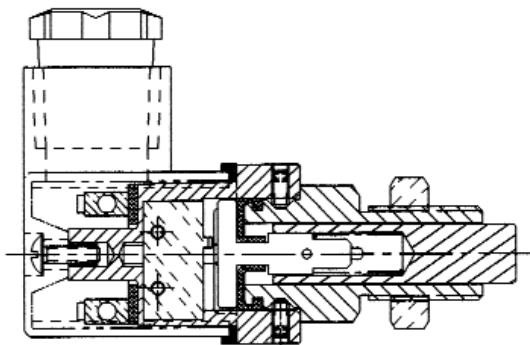


Valve Size		A		B	
Inch	DN	Inch	cm	Inch	cm
0.75	20	8.34	212	14.06	357
1.00	25	8.34	212	14.46	367
1.50	40	9.06	230	18.81	478
2.00	50	9.06	230	19.28	490
3.00 *	80	9.81	249	27.03	687
4.00 *	100	9.81	249	28.23	717

*Dimensions reflect 47 acuator



2" PAS Bonnet Assembly Closed Position



Manual Bonnet Mechanical Switch Assembly

Manual Bonnet Switch Package

Bonnet Configuration:

Hand wheel operated 913 and 963 bonnet assemblies

Size Range:

0.50", 0.75", 1.00", 1.50" and 2.00"

Enclosure Size:

2.75" L x 1.18" square

External Housing Material:

Nylon

Switch Voltage:

Silver Contacts - 250 vac, 5A

Gold Contacts - 30 vdc, 0.1A

Temperature Ratings:

External -32°F to 150°F

Washdown Capabilities:

IPA, Sodium Hypochlorite, Sodium Hydroxide, Hydrogen Peroxide, chloride detergents

Approvals:

Enclosure - Nema 4X hosedown, IP 65

Mechanical Switch - UL/CSA

Conduit Port:

1/2" NPT

Terminals:

NO, NC, C

Wire Gage:

14-20 AWG

Adjustability:

Switch is adjustable, housing can be rotated 360° at 45° increments

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