

*Pressure & Temperature Switches
for all your needs*

A-SERIES MINIATURE PRESSURE SWITCH



UL LISTED

ISO 9001
REGISTERED FIRM

DRESSER INSTRUMENT

A Halliburton Company

A-SERIES PRODUCT INFORMATION

The Ashcroft A-Series switch line is designed for alarm, shutdown, control and interlock applications for a wide variety of processes and equipment. Materials of construction have been selected for long life. Precision snap acting switch elements are featured and an optional glass to metal seal is offered for added reliability and safety in the toughest applications. The actuators we use have been proven in more than 20 years of service in the world's plants and mills. Special designs are available for food, pharmaceutical and high purity applications. Simplicity and ease of use are stressed to improve reliability of the installation.

A-Series switches have proven reliable in:

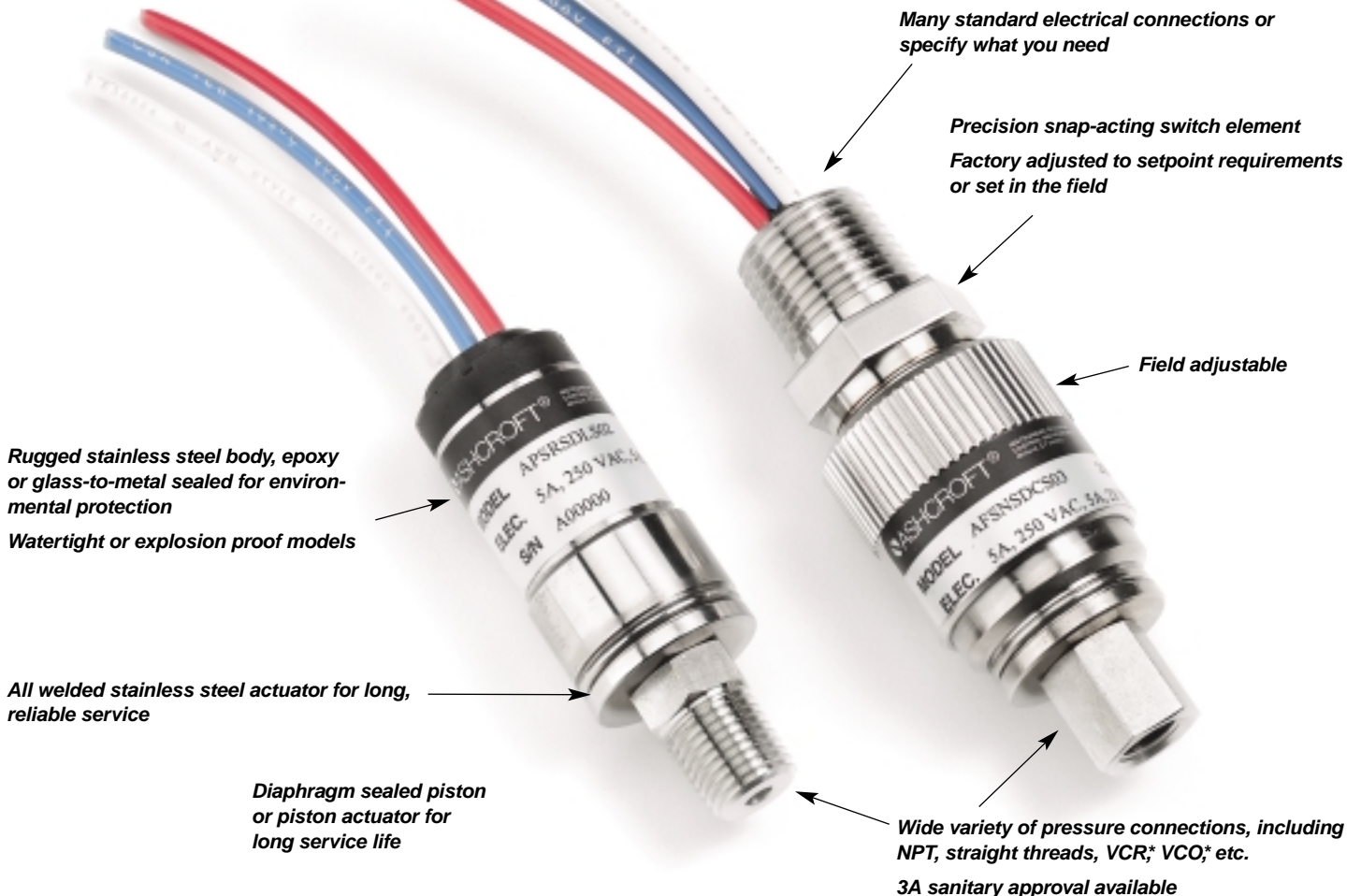
- Offshore oil rigs, where stainless steel construction and small size is desirable
- Chemical and petrochemical plants, where small size and explosionproof

construction is important

- Pulp and paper mills on equipment where corrosion resistance and sealed contacts extend life
- Special equipment such as autoclaves and sterilizers, where special connections are needed
- Food and pharmaceutical applications where X3A sanitary connections are required
- Rail and heavy vehicle hydraulic and pneumatic braking applications, where small size is an advantage
- Other special machinery and equipment applications, where small size and high performance are desirable

Typical applications include: pumps, compressors, washers, filters, degreasers, evaporators, recovery systems, food processing, ground support equipment, reverse osmosis systems, heat exchangers, hydraulic systems,

WELDED STAINLESS STEEL BODY



lubrication systems, marine equipment, textile machinery, heating and air conditioning equipment.

Sealed Switch Element

We recommend optional sealed switch element for improved reliability. The sealed switch provides uncompromising contact protection in harsh or corrosive environments, such as that found in off shore platforms, off-road equipment, outdoor plants and mills, and equipment that is washed down or is subject to frequent temperature changes.

The Dresser Control Instrument Operation supplies highly reliable Ashcroft® switches and controls for industrial and process applications. We begin with rock-solid designs, matching the most appropriate technology with the safety and reliability requirements of the applications. The materials of construction are specified to Dresser's exacting standards, and product is built



to last in the toughest applications. Our modern, responsive manufacturing facility in Milford, Connecticut is supported by an extensive network of stocking

distributors and factory sales offices located in virtually every part of the world. Special application assistance is always just a telephone call away.

RECOMMENDED PRACTICE:

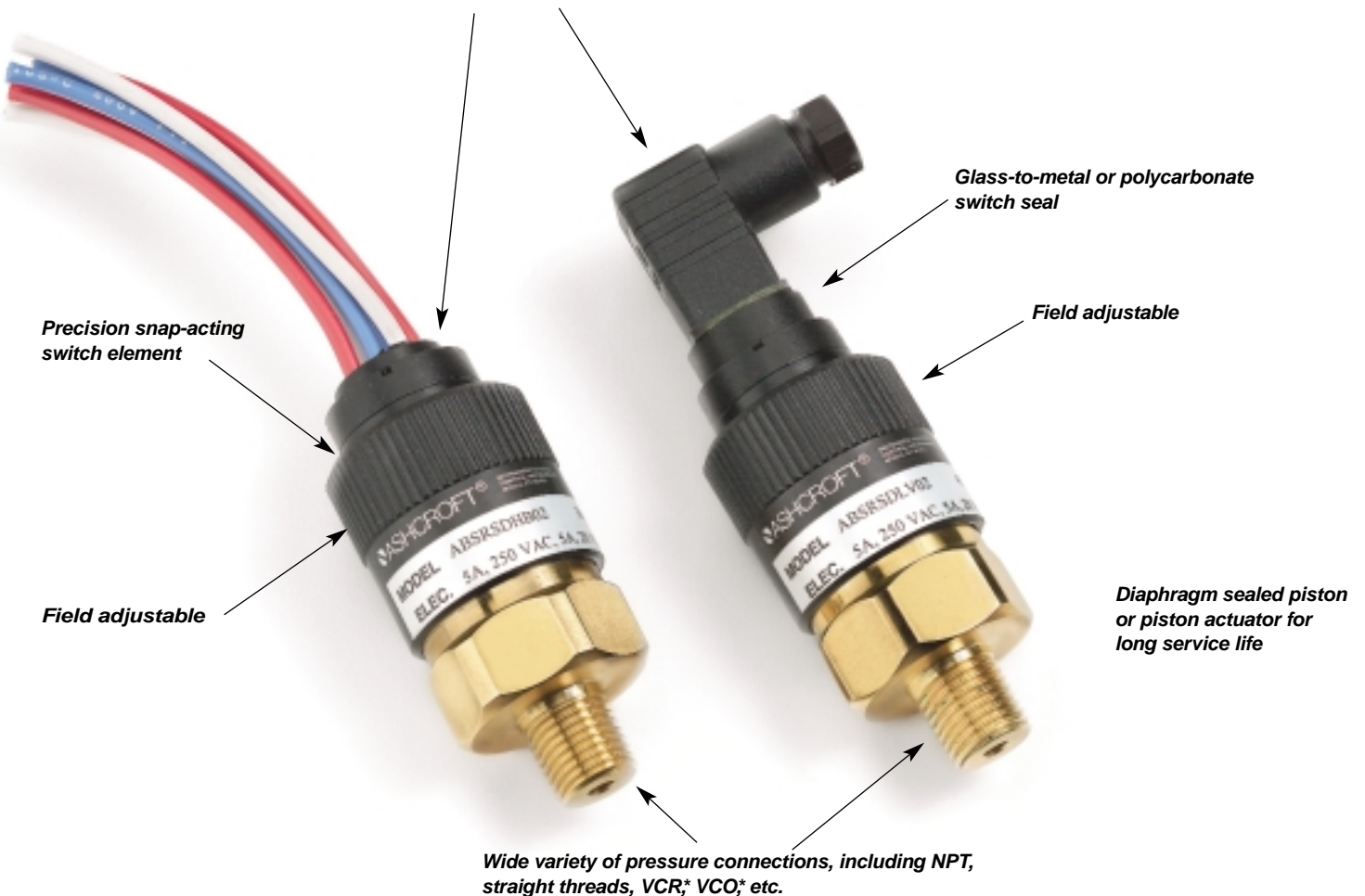
All controls should be selected considering the media and ambient operating conditions. Improper application can be detrimental to the switch, cause failure and possibly personal injury or property damage.

The information in this catalog is offered as a guide to assist in making the proper selection of Ashcroft controls.

Additional information is available from Dresser Control Instrument Operations Sales. Offices are listed on the back cover.

BRASS BODY

Many standard electrical connections or specify what you need



Precision snap-acting switch element

Field adjustable

Glass-to-metal or polycarbonate switch seal

Field adjustable

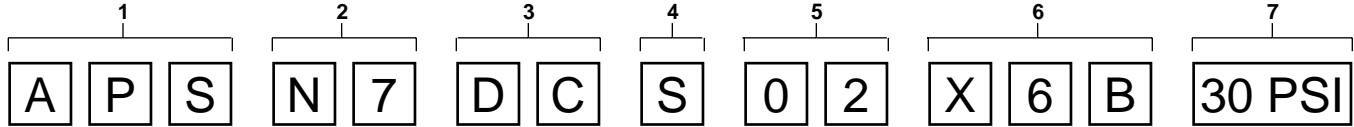
Diaphragm sealed piston or piston actuator for long service life

Wide variety of pressure connections, including NPT, straight threads, VCR, VCO,* etc.*

ORDER INFORMATION



A-SERIES WELDED STAINLESS STEEL BODY PRESSURE SWITCH MODEL NUMBER:
To specify the exact switch desired select entries from appropriate tables as shown in example below.



1 – FUNCTION	
APS	Pressure switch, stainless steel body, single setpoint, fixed deadband, factory set
APA	Pressure switch, stainless steel body, single setpoint, fixed deadband, field adjustable

2 – ENCLOSURE (BODY)	
NS	Watertight stainless steel body with glass-to-metal switch seal
RS	Watertight stainless steel body with polycarbonate switch seal
N7	Explosion proof body with glass to metal switch seal
R7	Explosion proof body with polycarbonate switch seal (APS only)

3A – SWITCH ELEMENT CODE		
S.P.D.T. Switch Elements UL/CSA Listed		
CODE		
D	General Purpose	5A, 125/250 Vac 5A, 28 Vdc
M	Gold Contacts	1A, 125 Vac
D.P.D.T. (2-S.P.D.T.) Switch Elements UL/CSA Listed		
CODE		
Dual		
DD	Dual General Purpose	5A, 125/250 Vac 5A, 28 Vdc
MM	Dual Gold Contacts	1A, 125 Vac

Notes:
Dual switch elements only available with wire leads (L) and RB enclosure.

3B – ELECTRICAL CONNECTION CODE	
CODE	Electrical Terminations
L	Wire leads, 3-#18 AWG Insul.- 12"
S	Screw terminals, 3-#6 binding head screws
T	Spade terminal, 3- .187 male spade
C	1/2 NPT male conduit connection with wire leads
H	Micro DIN connector

4 – ACTUATOR SEAL		
Code	Material	Process Temperature Limits* °F)
S	316 Stainless Steel Welded	0-200
H	Stainless Steel Piston/ Viton O-ring	20-200

5 – PRESSURE PORT	
Code	Description
00	Flush Diaphragm, 316 SS
01	1/8 NPT Male
02	1/4 NPT Male
03	1/8 NPT Female
04	1/4 NPT Female
05	7/16-20 SAE
06	VCR
07	VCO
08	3/4 NPT Male Flush
09	3/4 TriClamp Connection

6 – F-SERIES OPTIONS	
CODE	DESCRIPTION
XFS	Factory Adjusted Setpoints
XNH	Tagging Stainless Steel
X6B	Clean for Oxygen Service
X3A	1 1/2" or 2" Tri-Clover connection with 3A approval

7A – NOMINAL RANGE AND PERFORMANCE TABLE – CODE S ACTUATOR SEAL					
Nominal Range		Proof Pressure psi	Setpoint Repeatability APS (Factory Set) psi	Setpoint Adjustability Range psi	Deadband (All Switch Elements)
psi	bar				
30IMV/15	-1/1	2000	±1.0 Hg/±0.5	-30 to -4 Hg/1.5-15	1-5 Hg/5-3
30	2	2000	±0.5	3-30	0.5-3.0
60	4	2000	±1.0	6-60	1.0-4.0
100	7	2000	±2.0	10-100	2.0-10
200	14	2000	±5.0	20-200	10-15
400	28	2000	±10	40-400	15-30
600	40	3000	±15	60-600	30-60

7B – NOMINAL RANGE AND PERFORMANCE TABLE – CODE H ACTUATOR SEAL					
Nominal Range		Proof Pressure psi	Setpoint Repeatability APS (Factory Set) psi	Setpoint Adjustability Range psi	Deadband (All Switch Elements)
psi	bar				
1000	70	8000	±20	100-1000	50-100
2000*	140	8000	±25	200-2000	100-100

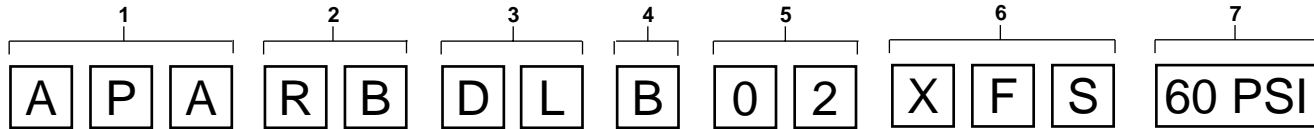
*APS only

ORDER INFORMATION



A-SERIES BRASS BODY PRESSURE SWITCH MODEL NUMBER:

To specify the exact switch desired select entries from appropriate tables as shown in example below.



1 – FUNCTION	
APS	Pressure switch, brass body, single setpoint, fixed deadband, factory set
APA	Pressure switch, brass body, single setpoint, fixed deadband, field adjustable

2 – ENCLOSURE	
NB	Brass/polycarbonate body with glass to metal switch seal
RB	Brass/polycarbonate body with polycarbonate switch seal

3 – SWITCH ELEMENTS CODE		
CODE	S.P.D.T. Switch Elements UL/CSA Listed	
D	General Purpose	5A, 125/250 Vac 5A, 28 Vdc
M	Gold Contacts	1A, 125 Vac
CODE	D.P.D.T. (2-S.P.D.T.) Switch Elements UL/CSA Listed	
DD	Dual General Purpose	5A, 125/250 Vac 5A, 28 Vdc
MM	Dual Gold Contacts	1A, 125 Vac

Notes:
Dual switch elements only available with wire leads (L) and RB enclosure.

3B – ELECTRICAL CONNECTION CODE	
CODE	Electrical Terminations
L	Wire leads, 3-#18 AWG Insul.- 12"
S	Screw terminals, 3-#6 binding head screws
T	Spade terminal, 3-.187 male spade
C	½ NPT male conduit connection with wire leads
H	Micro DIN connector

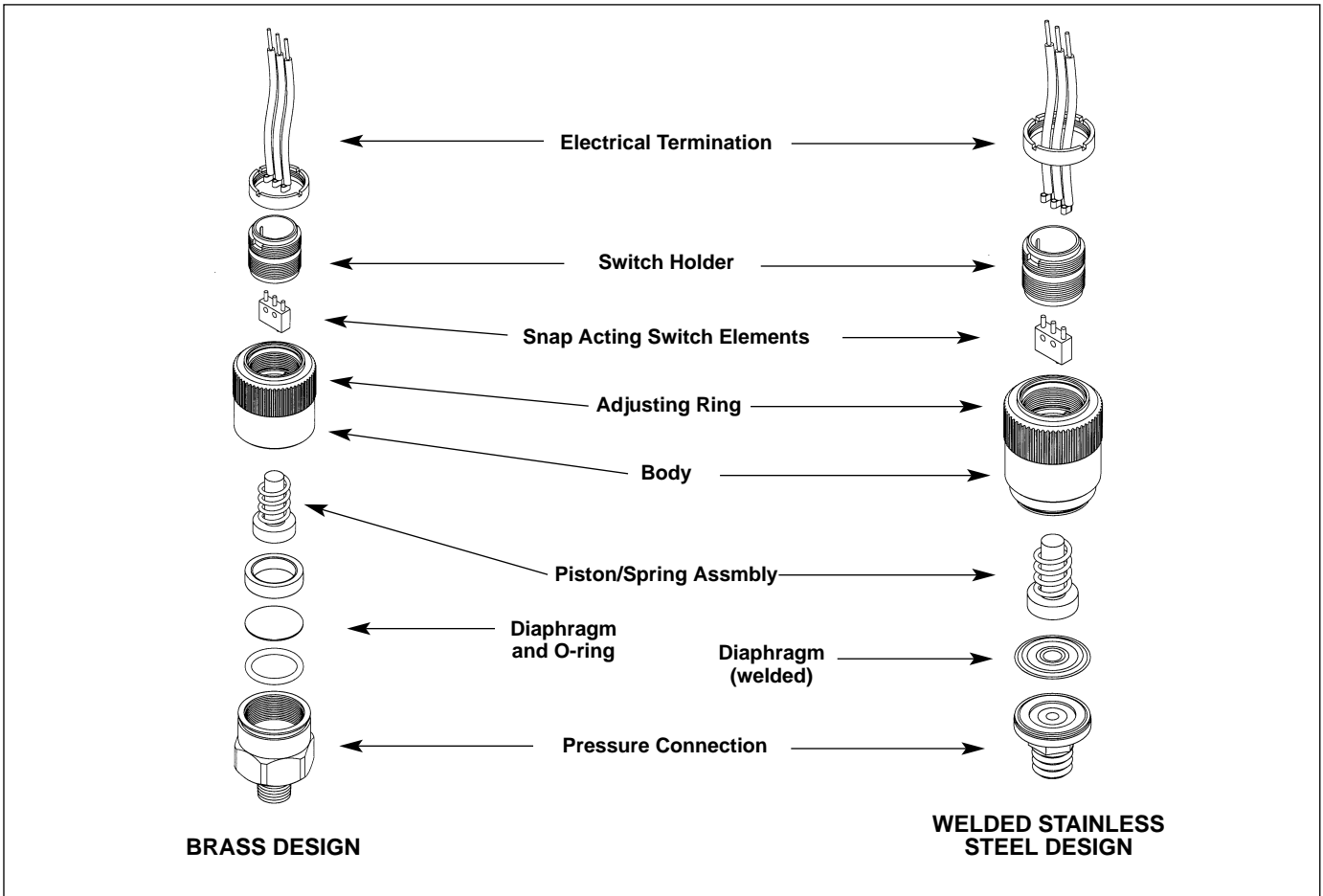
4 – ACTUATOR SEAL		
Code	Material	Process Temperature Limits ^a °F)
B	Buna N	0-150
V	Viton	20-200
T	Teflon	0-150
H	Stainless Steel Piston/ Viton O-ring	20-200

5 – PRESSURE CONNECTION CODE	
Code	Description
01	½ NPT Male
02	¼ NPT Male

6 – A-SERIES OPTIONS	
Code	Description
XFS	Factory Adjusted Setpoints
XNH	Tagging Stainless Steel
X6B	Cleaned for Oxygen Service

7A – AP NOMINAL RANGE & PERFORMANCE TABLE – CODES B, V, T ACTUATOR SEAL							
Nominal Range		Proof Pressure psi	Setpoint Repeatability APS (Factory Set) psi	Setpoint Adjustability Range psi	Deadband (All Switch Elements)		
					Buna N	Viton & Teflon	
psi	bar						
30IMV	-1	1000	±1.0"Hg/±0.5	-30 to -4"Hg	1-5"Hg	1.0-7.0	
15	1	1000	±0.5	1.5-15	0.1-1.0	0.2-2.0	
30	2	1000	±0.5	3-30	0.2-1.3	0.3-2.5	
60	4	1000	±1.0	6-60	0.3-1.5	0.5-3.0	
100	7	1000	±2.0	10-100	1.0-5.0	4.0-10	
200	14	1000	±5.0	20-200	4.0-12	5.0-18	
400	28	1600	±10	40-400	5.0-20	8.0-25	
600	40	2400	±15	60-600	8.0-25	4.0-34	
1000	70	4000	±20	100-1000	15.0-35	15.0-55	

7B – AP NOMINAL RANGE & PERFORMANCE TABLE – CODE H ACTUATOR SEAL					
Nominal Range		Proof Pressure psi	Setpoint Repeatability APS (Factory Set) psi	Setpoint Adjustability Range psi	Deadband Code D, M, DD, MM
1000	70	4000	±20	100-1000	50-100



SELECTION

Before making your selection, consider the following:

1. Actuator

The actuator responds to changes in pressure, and operates the switch element in response to these changes.

The actuator is normally exposed to process fluid and must therefore be chemically compatible with it. The following may be used to help select actuator type:

For nominal pressure ranges 0-15 psi through 0-2000 psi, Dresser's standard actuator is a diaphragm-sealed piston. In this actuator, process pressure acting on the piston area causes it to overcome the adjustable spring force and actuate a snap-action switch. A diaphragm and O-ring seal then process media from this mechanism. These are available in: Buna N, Teflon and Viton. The standard process connection is stainless steel or brass. An optional, all welded stainless steel actuator is available on ranges up to 1000 psi. For hydraulic applications, the piston actuator (H) is recommended. This actuator features a stainless steel piston, moving in a smooth

bore and sealed by a Viton O-ring. This design is more reliable than the diaphragm sealed piston when subjected to frequent large pressure excursions, pressure surges and spikes associated with typical hydraulic applications.

2. Enclosure (Body)

The enclosure protects the switch element and mechanism from the environment and has provisions for mounting and wiring. Choose either brass body or stainless steel for maximum corrosion resistance. You should also choose between watertight for most industrial applications and explosion-proof NEMA 7/9 for most process applications. The bonded brass body is not available in explosion proof design for hazardous locations.

A-Series pressure switches may be mounted directly to the process by means of the pressure connection. Standard models include 18" of wire for termination. Explosion proof designs also include a 1/2 NPT male conduit connection

Note: When installing Ashcroft switches, refer to instruction sheets included with each switch, the National Electrical Code, and any other local codes or requirements to assure safety.

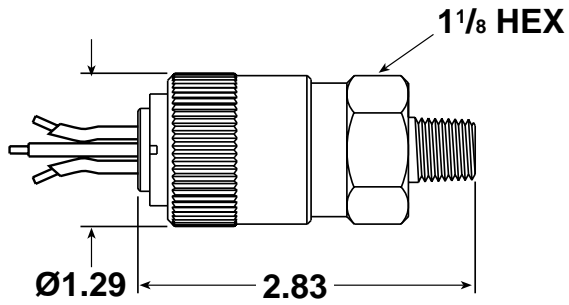
3. The Switching Function

Next, consider the switching function. Most applications for alarm and shutdown and interlock are satisfied by standard A-Series, which features single setpoint and fixed dead-band. For pump, compressor and other control applications, special deadbands may be required. Consult your Ashcroft representative or contact us via the website for application assistance.

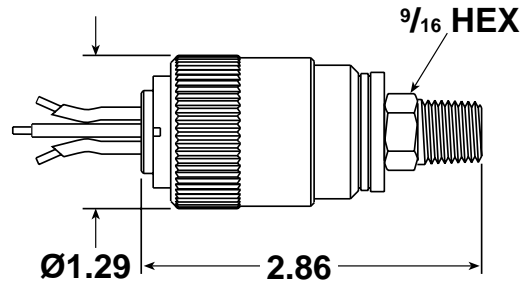
4. The Switch Element

Finally, the electrical switching element must be compatible with the electrical load being switched. For ease of selection, all electrical switching elements are snap-acting, SPDT (single pole-double throw), or 2 (SPDT). Refer to catalog pages for switch element choices. Select a switch element with electrical rating that exceeds the electrical rating of the device being controlled by the switch. For better reliability and safety, optionally sealed switch designs may be specified.

A-SERIES DIMENSIONS

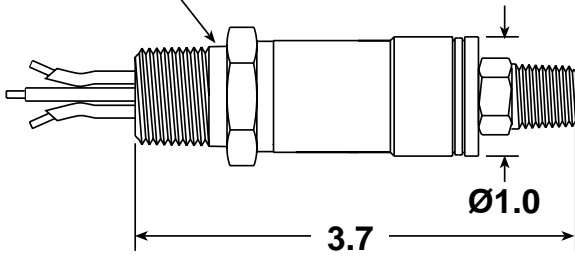


APA RB DL S02

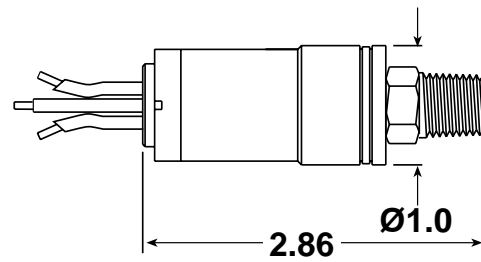


APA NS DL S02

**1/2 NPT MALE
CONDUIT CONNECTION**

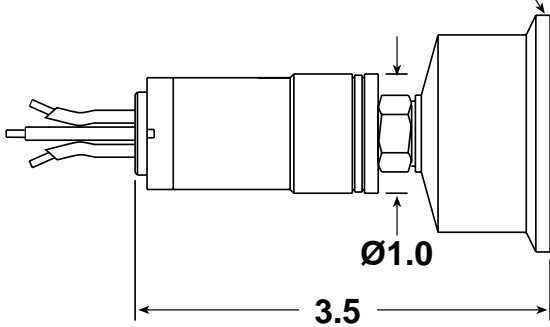


APS N7 DL S02

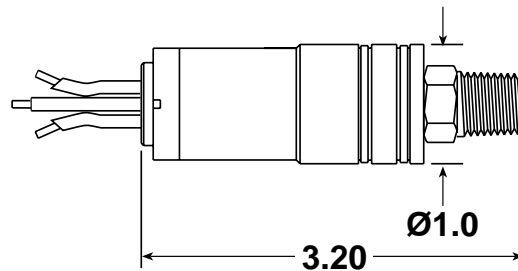


APS NS DL S02

**1 1/2" TRICLOVER
CONNECTION**



APS NS DL S02 X3A



APS NS DL S02 (Vac./15 psi Range)

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