

## B-Series Switches – Pressure, Differential Pressure, Temperature & Hydraulic



### FEATURES

*B-Series switches have proven reliable in such harsh environments as:*

- Offshore oil rigs
- Chemical and petrochemical plants
- Pulp and paper mills
- Steel mills
- Power plants
- Water and sewage-treatment plants
- Other corrosive environments

Ashcroft Inc. 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 Ashcroft's exacting standards, and product is built to last in the toughest applications. Our modern, responsive manufacturing facility 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.

The Ashcroft B-Series switch line is designed to satisfy most switch requirements. Materials of construction have been selected for long life. A wide variety of precision switch elements are available to meet every application requirement, including hermetically sealed contacts for added reliability and safety. 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 fire safety, NACE, limit control and other more stringent requirements. Simplicity and ease of use are stressed to improve reliability of the installation.

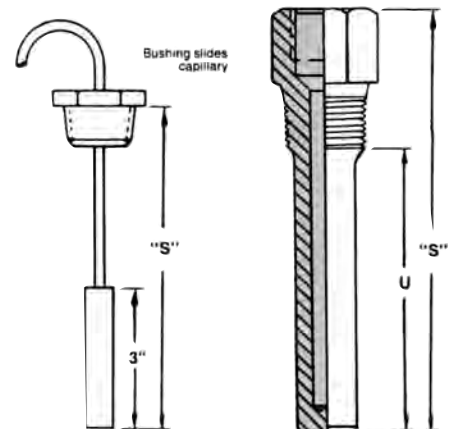
Applications include: pumps, compressors, washers, filters, degreasers, evaporators, recovery systems, food processing, ground support equipment, reverse osmosis systems, heat exchangers, hydraulic systems, lubrication systems, marine equipment, textile machinery, heating and air conditioning equipment.

### Thermowells

Thermowells must be used on any application where the stem of the temperature switch may be exposed to pressure, corrosive fluids or high velocity. Additionally, the use of a thermowell permits instrument interchange or calibration check without disturbing or closing down the process.

Ashcroft temperature switches have bulb diameters to match 3/8" nominal bore thermowells. The bulbs have a sensitive portion length of 2" which can be used with 2 1/2" "U" dimensioned thermowells or longer. For maximum accuracy, a thermowell's "U" dimension should be selected to permit complete immersion of the sensitive portion plus 1" when measuring the temperature of liquids; an extra 3" should be allowed when measuring the temperature of gases.

Thermowell bushings should be used with remote mount temperature switches. We recommend the standard 3" bulb and code 69 Series bushings for use with any thermowell "U" dimension. A split rubber grommet allows easy installation and "S" dimension adjustment.



# B-Series Switches – Pressure, Differential Pressure, Temperature & Hydraulic

## Temperature Switches

B-Series temperature switches feature a SAMA Class II vapor pressure thermal system. This system provides quick, accurate response to process temperature changes with negligible ambient temperature effects. This is inherent in the design due to the precise relation-

ship that exists between temperature and pressure according to the vapor pressure laws. A wide selection of sensing bulb and armored capillary lengths is available. The vapor pressure system design features small bulb sizes, making installation easy and cost-effective.

All models feature  $\pm 1.0\%$  percent of

span setpoint repeatability with very high overtemperature ratings.

These standard designs perform well in applications where shock and vibration could be a problem and should be used with Ashcroft thermowells for bulb protection and ease of installation and maintenance.

## STANDARD TEMPERATURE RANGE SELECTION

Nominal Range <sup>(1)</sup>		Maximum Temperature	Approximate Deadband <sup>(1)</sup> Switch Element				
°F	°C	°F	20, 26, 27	21, 24, 31	50	22	32, 42
-40 to 60	-40 to 16	400	1.0-2.0	3.0-8.0	1.5-5.5	1.4-6.0	8.0-16.0
0 to 100	-20 to 40	400	1.5-3.0	5.0-12.0	2.2-8.5	1.5-7.5	9.0-20.0
75 to 205	20 to 95	400	1.5-3.5	8.0-16.0	2.5-12.0	2.0-9.0	10.0-24.0
150 to 260	65 to 125	400	1.5-3.0	5.0-12.0	2.2-8.5	2.0-9.0	10.0-24.0
235 to 375	110 to 190	500	1.5-3.5	5.0-12.0	2.5-8.5	2.0-9.0	10.0-24.0
350 to 525 <sup>(3)</sup>	175 to 275	700	2.0-4.5	8.0-16.0	3.2-12.0	2.5-10.0	15.0-34.0
500 to 750 <sup>(2)</sup>	260 to 400	900	4.0-8.0	16.0-30.0	7.2-24.0	5.0-23.0	30.0-50.0

### NOTES:

- 1 All deadbands given in °F.
- 2 Available with remote mount thermal systems only.
- 3 Not available with 2<sup>3</sup>/<sub>4</sub>" stem.
- 4 Dual switch element multiply single switch element value by 1.6 for approximate deadband.
- 5 Set and reset points must fall within the adjustable range.

# B-Series Switches – Pressure, Differential Pressure, Temperature & Hydraulic

## Pressure & Differential Pressure Switches

B-Series pressure, differential pressure and vacuum switches use two different actuators depending on setpoint requirements. For setpoints between 2 and 3000 psi, the simple, rugged diaphragm-sealed piston actuator is used. This design features high reliability and choice of actuator seal materials for virtually every application. An optional welded design is also available for setpoints up to 1000 psi for

of construction.

All standard models feature  $\pm 1$  percent of range setpoint repeatability and a minimum of 400 percent of range proof pressures.

These standard designs perform well in applications where shock and vibration could be a problem and may be used in conjunction with Ashcroft diaphragm seals in extreme services such as slurries or abrasive process fluids.

maximum reliability. This design is available in 316 SS or Monel. Differential pressure models use a unique, dual diaphragm-sealed piston design that features very high static operating pressures and small size.

For setpoints between 4.5 and 150 inches of H<sub>2</sub>O, a large diaphragm is used for increased sensitivity in both pressure and differential pressure designs with good choice of materials

## PRESSURE/VACUUM SWITCHES

Nominal Range <sup>(1)</sup>			Overpressure Ratings		Approximate Deadband <sup>(2)</sup> Switch Element				
			Proof psi	Burst psi	20, 26, 27	21, 24, 31	50	22	32, 42
<b>Vacuum</b> -30" Hg	-760mm Hg	-100 kPa	250	400	0.3-0.7	1.5-3.0	0.5-2.2	0.4-1.5	2.1-4.2
<b>Compound</b> -15" H <sub>2</sub> O/ 15" H <sub>2</sub> O	-375mm H <sub>2</sub> O/ 375mm H <sub>2</sub> O	-3.7 kPa/ 3.7 kPa	20	35	0.15-.75/ 0.15-.75	1.5-2.5/ 1.5-2.5	0.45-2.0/ 0.45-2.0	0.5-1.2/ 0.5-1.2	2.1-3.5/ 2.1-3.5
-30" H <sub>2</sub> O/ 30" H <sub>2</sub> O	-760mm H <sub>2</sub> O/ 760mm H <sub>2</sub> O	-7.5 kPa/ 7.5 kPa	20	35	0.30-.60/ 0.30-.60	1.5-2.5/ 1.5-2.5	0.45-2.0/ 0.45-2.0	0.5-1.5/ 0.5-1.5	2.1-3.5/ 2.1-3.5
-30" Hg/ 15 psi	-760mm Hg/ 1.0 kg/cm <sup>2</sup>	-100 kPa/ 100 kPa	250	400	0.5-1.0/ 0.3-0.7	2.0-3.0/ 0.5-1.5	0.75-2.5/ 0.5-1.0	0.7-1.8/ 0.7-1.4	2.8-4.2/ 0.7-2.1
-30" Hg/ 30 psi	-760mm Hg/ 2.0 kg/cm <sup>2</sup>	-100 kPa/ 200 kPa	250	400	1.0-1.5/ 0.3-0.8	3.0-6.0/ 1.0-2.0	1.2-4.5/ 0.7-1.5	1.4-2.4/ 0.4-1.3	4.2-8.4/ 1.4-2.8
-30" Hg/ 60 psi	-760mm Hg/ 4.0 kg/cm <sup>2</sup>	-100 kPa/ 400 kPa	250	400	2.0-3.0/ 0.7-1.5	5.0-9.0/ 3.0-5.0	2.5-7.0/ 1.1-4.0	2.8-4.5/ 1.0-2.3	7.0-12.0/ 4.2-7.0
<b>Pressure</b> 10" H <sub>2</sub> O	250mm H <sub>2</sub> O	2.5 kPa	20	35	0.2-0.5	1.0-2.0	0.35-1.5	0.4-1.0	1.4-2.8
30" H <sub>2</sub> O	750mm H <sub>2</sub> O	7.5 kPa	20	35	0.3-0.6	1.5-2.5	0.45-2.0	0.5-2.0	2.1-3.5
60" H <sub>2</sub> O	1500mm H <sub>2</sub> O	15 kPa	20	35	0.5-1.3	1.5-3.5	0.9-2.5	0.7-3.0	2.1-5.0
100" H <sub>2</sub> O	2500mm H <sub>2</sub> O	25 kPa	20	35	0.6-1.6	2.5-5.5	1.1-4.0	1.0-4.0	3.5-7.7
150" H <sub>2</sub> O	3750mm H <sub>2</sub> O	37 kPa	20	35	1.0-2.5	4.5-8.5	1.7-6.5	2.0-6.0	6.0-12.0
15 psi	1.0 kg/cm <sup>2</sup>	100 kPa	500	1500	0.1-0.35	0.5-1.5	0.2-1.0	0.4-1.0	0.7-2.1
30 psi	2.0 kg/cm <sup>2</sup>	200 kPa	500	1500	0.1-0.50	0.5-1.5	0.3-1.0	0.4-1.0	0.7-2.1
60 psi	4.0 kg/cm <sup>2</sup>	400 kPa	500	1500	0.3-1.0	1.0-3.5	0.7-2.5	0.6-2.0	1.4-5.0
100 psi	7.0 kg/cm <sup>2</sup>	700 kPa	1000	3000	0.5-1.7	1.5-5.0	1.1-3.5	1.0-4.5	2.1-7.0
200 psi	14 kg/cm <sup>2</sup>	1400 kPa	1000	3000	1-3	5-13	2-9	3.0-7.5	7.0-18.2
400 psi	28 kg/cm <sup>2</sup>	2800 kPa	2400	3000	4-7.5	5-24	5.5-15	4.0-11.0	7.0-33.6
600 psi	42 kg/cm <sup>2</sup>	4200 kPa	2400	3000	4-11	9-30	7-20	5.0-23.0	12.6-42
1000 psi	70 kg/cm <sup>2</sup>	7000 kPa	12000	18000	7-30	30-110	18-70	15-80	42-154
3000 psi	210 kg/cm <sup>2</sup>	2100 kPa	12000	18000	15-60	80-235	37-160	30.0-230	112-329

## DIFFERENTIAL PRESSURE SWITCHES

Nominal Range <sup>(1)</sup>			Pressure Ratings		Approximate Deadband <sup>(2)</sup> Switch Element				
			Static Working Pressure	Proof psi	20, 26, 27	21, 24, 31	50	22	32, 42
30" H <sub>2</sub> O	750mm H <sub>2</sub> O	7.5 kPa	5.4	21.6	0.3-0.6	1.5-2.5	0.45-2.0	0.5-2.0	2.1-3.5
60" H <sub>2</sub> O	1500mm H <sub>2</sub> O	15 kPa	5.4	21.6	0.5-1.3	1.5-3.5	0.9-2.5	0.7-3.0	2.1-5.0
100" H <sub>2</sub> O	2500mm H <sub>2</sub> O	25 kPa	5.4	21.6	0.6-1.6	2.5-5.5	1.1-4.0	1.0-4.0	3.5-7.7
150" H <sub>2</sub> O	3750mm H <sub>2</sub> O	37 kPa	5.4	21.6	1.0-2.5	4.5-8.5	1.8-6.5	2.0-6.0	6.3-12.0
15 psid	1.0 kg/cm <sup>2</sup>	100 kPa	500	2000	0.5-1.0	2.0-5.0	0.7-3.5	0.7-1.4	2.8-7.0
30 psid	2.0 kg/cm <sup>2</sup>	200 kPa	500	2000	1.0-2.0	2.0-5.0	1.5-3.5	1.4-2.8	2.8-7.0
60 psid	4.0 kg/cm <sup>2</sup>	400 kPa	500	2000	2.0-4.0	3.0-6.0	3.0-4.5	2.8-5.6	4.2-8.5
100 psid	7.0 kg/cm <sup>2</sup>	700 kPa	1000	4000	4.0-10.0	11.0-20.0	7.0-15.0	6.0-14.0	16.0-28.0
200 psid	14.0 kg/cm <sup>2</sup>	1400 kPa	1000	4000	5.0-15.0	12.0-40.0	10.0-26.0	7.0-21.0	17.0-56.0
400 psid	28.0 kg/cm <sup>2</sup>	2800 kPa	1000	8000	10.0-20.0	20.0-60.0	15.0-40.0	14.0-28.0	28.0-84.0
600 psid	42.0 kg/cm <sup>2</sup>	4200 kPa	1000	8000	20.0-40.0	80.0-150.0	30.0-115.0	30.0-56.0	112.0-210.0

Values shown are for zero static working pressure.

### NOTES:

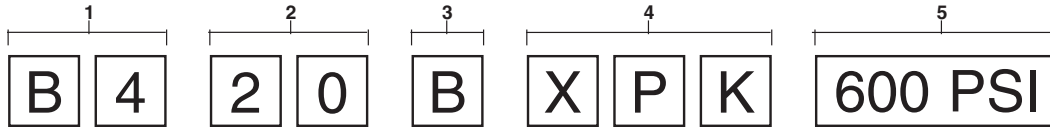
- Switches may generally be set between 15% and 100% of nominal range on increasing pressure. Consult factory for applications where setpoints must be lower.
- All deadbands are given in English units as shown in the nominal range column. Deadbands shown are for switches with Buna N diaphragm. Approximate deadbands for optional diaphragms:

Viton: Multiply Buna N value by 1.4  
 Teflon: Multiply Buna N value by 1.2  
 Stainless Steel: Multiply Buna N value by 1.7  
 Monel: Multiply Buna N value by 1.7  
 Dual Switch Element: Multiply single switch element value by 1.6 for approximate deadband.

# B-Series Switches – Pressure, Differential Pressure, Temperature & Hydraulic

## B-SERIES PRESSURE AND DIFFERENTIAL PRESSURE SWITCH MODEL NUMBER:

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



1 – ENCLOSURE	
<b>B4</b>	Pressure switch, Type 400, watertight enclosure meets NEMA 3, 4, 4X, 13 and IP66 requirements.
<b>B7</b>	Pressure switch, Type 700, explosion-proof enclosure meets Div. 1 & 2, NEMA 7, 9 and IP66 requirements.
<b>D4</b>	Differential pressure switch, Type 400, watertight enclosure meets NEMA 3, 4, 4X, 13 and IP66 requirements.
<b>D7</b>	Differential pressure switch, Type 700, explosion-proof enclosure meets Div. 1 & 2, NEMA 7, 9 and IP66 requirements.

3 – ACTUATOR SEAL					
Code and Material	Process Temperature Limits °F <sup>(9)</sup>	Range			
		Vac. "H <sub>2</sub> O	0-600 psi	1000 psi	3000 psi
B – Buna-N	0 to 150	•	•	•	•
V – Viton	20 to 300	•	•	•	
T – Teflon	0 to 150	•	•	•	•
S – 316L <sup>(8)</sup>	0 to 300		•	•	
P – Monel <sup>(8)</sup>	0 to 300		•	•	

4 – OPTIONS
Use table from page 7

5 – RANGE
Select from table on page 3

### NOTES:

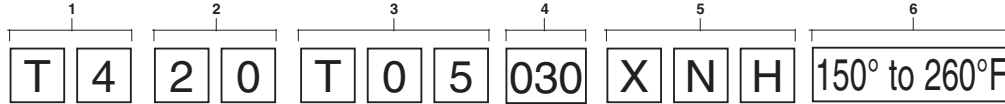
- Standard switch.
- Not available with psid ranges.
- Dual switches are 2 SPDT snap-action switches, not independently adjustable.
- Wires cannot be terminated inside B400 switch enclosure.
- Not available with type 700 enclosure.
- Estimated dc. rating, 2.5A, 28 Vdc (not UL listed).
- Estimated dc rating, 0.4A, 120 Vdc (not UL listed).
- Available on pressure only.
- Ambient operating temperature limits –20 to 150°F, all styles, setpoint shift of ±1% of range per 50°F temperature change is normal. Switches are calibrated at 70°F reference.

2 – SWITCH ELEMENT SELECTION		
Order Code	Switch Elements UL/CSA Listed SPDT	
<b>20<sup>(7)</sup></b>	Narrow deadband ac	15A, 125/250 Vac
<b>21</b>	Ammonia service	5A, 125/250 Vac
<b>22<sup>(6)</sup></b>	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
<b>23</b>	Heavy duty ac	22A, 125/250 Vac
<b>24<sup>(1)</sup></b>	General purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc; 6A, 30 Vdc
<b>25<sup>(2)</sup></b>	Heavy duty dc	10A, 125 Vac or dc, 1/8 HP, 125 Vac or dc
<b>26<sup>(7)</sup></b>	Sealed environment proof	15A, 125/250 Vac
<b>27</b>	High temperature 300°F	15A, 125/250 Vac
<b>28<sup>(5)</sup></b>	Manual reset trip on increasing	15A, 125/250 Vac
<b>29<sup>(5)</sup></b>	Manual reset trip on decreasing	15A, 125/250 Vac
<b>31</b>	Low level (gold) contacts	1A, 125 Vac
<b>32</b>	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc
<b>42</b>	Hermetically sealed switch, gold contacts	1A, 125 Vac
<b>50</b>	Variable deadband	15A, 125/250 Vac
UL/CSA Listed Dual (2 SPDT)		
<b>61<sup>(7)</sup></b>	Dual narrow deadband	15A, 125/250 Vac
<b>62<sup>(7)</sup></b>	Dual sealed environment proof	15A, 125/250 Vac
<b>63</b>	Dual high temp. 300°F	15A, 125/250 Vac
<b>64</b>	Dual general purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
<b>65</b>	Dual ammonia service	5A, 125/250 Vac
<b>67<sup>(4,6)</sup></b>	Dual hermetically sealed switch, narrow deadband	5A, 125/250 Vac
<b>68<sup>(4)</sup></b>	Dual hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc
<b>70</b>	Dual low level gold contacts	1A, 125 Vac
<b>71<sup>(4)</sup></b>	Dual hermetically sealed switch, gold contacts	1A, 125 Vac

# B-Series Switches – Pressure, Differential Pressure, Temperature & Hydraulic

## B-SERIES TEMPERATURE SWITCH MODEL NUMBER:

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



1 – ENCLOSURE	
<b>T4</b>	Temperature switch, Type 400, watertight enclosure meets NEMA 3, 4, 4X, 13 and IP66 requirements.
<b>T7</b>	Temperature switch, Type 700, explosion-proof enclosure meets Div. 1 & 2, NEMA 7, 9 and IP66 requirements.

2 – SWITCH ELEMENT SELECTION		
Order Code	Switch Elements UL/CSA Listed SPDT	
<b>20<sup>(7)</sup></b>	Narrow deadband ac	15A, 125/250 Vac
<b>21</b>	Ammonia service	5A, 125/250 Vac
<b>22<sup>(6)</sup></b>	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
<b>23</b>	Heavy duty ac	22A, 125/250 Vac
<b>24<sup>(1)</sup></b>	General purpose	15A, 125/250/480 Vac ½A, 125 Vdc ¼A, 250 Vdc; 6A, 30 Vdc
<b>25</b>	Heavy duty dc	10A, 125 Vac or dc, ⅛ HP, 125 Vac or dc
<b>26<sup>(7)</sup></b>	Sealed environment proof	15A, 125/250 Vac
<b>27</b>	High temperature 300°F	15A, 125/250 Vac
<b>28<sup>(5)</sup></b>	Manual reset trip on increasing	15A, 125/250 Vac
<b>29<sup>(5)</sup></b>	Manual reset trip on decreasing	15A, 125/250 Vac
<b>31</b>	Low level (gold) contacts	1A, 125 Vac
<b>32</b>	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc
<b>42</b>	Hermetically sealed gold contacts	1A, 125 Vac
<b>50</b>	Variable deadband	15A, 125/250 Vac
UL/CSA Listed Dual (2 SPDT)		
<b>61<sup>(7)</sup></b>	Dual narrow deadband	15A, 125/250 Vac
<b>62<sup>(7)</sup></b>	Dual sealed environment proof	15A, 125/250 Vac
<b>63</b>	Dual high temp. 300°F	15A, 125/250 Vac
<b>64</b>	Dual general purpose	15A, 125/250/480 Vac ½A, 125 Vdc ¼A, 250 Vdc
<b>65</b>	Dual ammonia service	5A, 125/250 Vac
<b>67<sup>(4,6)</sup></b>	Dual hermetically sealed switch, narrow deadband	5A, 125/250 Vac
<b>68<sup>(4)</sup></b>	Dual hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc
<b>70</b>	Dual low level gold contacts	1A, 125 Vac
<b>71<sup>(4)</sup></b>	Dual hermetically sealed switch, gold contacts	1A, 125 Vac

3 – THERMAL SYSTEM SELECTION			
Direct Mount			
Order Code	System Material	Style	
<b>TS</b>	316 SS	Rigid	
Remote Mount			
Order Code	System Material	Line Length	Style <sup>(9)</sup>
<b>T05</b>	316 SS	5'	Capillary with 302 SS Spring Armor
<b>T10</b>	316 SS	10'	
<b>T15</b>	316 SS	15'	
<b>T20</b>	316 SS	20'	
<b>T25</b>	316 SS	25'	

4 – BULB LENGTH SELECTION		
Direct Mount		
Order Code	“S” Dimension	Minimum Thermowell “U” Dimension
<b>027<sup>(8)</sup></b>	2¾”	–
<b>040</b>	4”	2½”
<b>060</b>	6”	4½”
<b>090</b>	9”	7½”
<b>120</b>	12”	10½”
Remote Mount		
<b>030<sup>(9)</sup></b>	3”	2½”

5 – OPTIONS	
Use table on page 7	

6 – STANDARD TEMPERATURE RANGE SELECTION	
Adjustable Range	
°F	°C
–40 to 60	–40 to 16
0 to 100	–40 to 40
75 to 205	20 to 95
150 to 260	65 to 125
235 to 375	110 to 190
350 to 525	175 to 275
500 to 750 <sup>(2)</sup>	260 to 400

**NOTES:**

- 1 Standard switch.
- 2 Available with remote mount thermal systems only.
- 3 Dual switches are 2 SPDT snap-action switches, not independently adjustable.
- 4 Wires cannot be terminated inside T400 switch enclosure.
- 5 Not available with Type 700 enclosure.
- 6 Estimated dc rating, 2.5A, 28 Vdc (not UL listed).
- 7 Estimated dc rating, 0.4A, 120 Vdc (not UL listed).
- 8 Not available on 350 to 525°F.
- 9 Consult factory on remote mount for bulb lengths other than 3'.

# B-Series Switches – Pressure, Differential Pressure, Temperature & Hydraulic

## B-SERIES HYDRAULIC PRESSURE SWITCH MODEL NUMBER:

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



1 – ENCLOSURE	
<b>H4</b>	Hydraulic pressure switch, Type 400, watertight enclosure meets NEMA 3, 4, 4X, 13 and IP66 requirements.

2 – SWITCH ELEMENT SELECTION		
Order Code	Switch Elements UL/CSA Listed SPDT	
<b>20<sup>(3)</sup></b>	Narrow deadband ac	15A, 125/250 Vac
<b>21</b>	Ammonia service	5A, 125/250 Vac
<b>22</b>	Hermetically sealed switch, narrow deadband	5A, 125/250 Vac
<b>23</b>	Heavy duty ac	22A, 125/250 Vac
<b>24<sup>(1)</sup></b>	General purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc; 6A, 30 Vdc
<b>25</b>	Heavy duty dc	10A, 125 Vac or dc, 1/8 HP, 125 Vac or dc
<b>26<sup>(3)</sup></b>	Sealed environment proof	15A, 125/250 Vac
<b>27</b>	High temperature 300°F	15A, 125/250 Vac
<b>28</b>	Manual reset trip on increasing	15A, 125/250 Vac
<b>29</b>	Manual reset trip on decreasing	15A, 125/250 Vac
<b>32</b>	Hermetically sealed switch, general purpose	11A, 125/250 Vac 5A, 30 Vdc
<b>42</b>	Hermetically sealed switch, gold contacts	1A, 125 Vac
UL/CSA Listed Dual (2 SPDT)		
<b>61<sup>(3)</sup></b>	Dual narrow deadband	15A, 125/250 Vac
<b>62<sup>(3)</sup></b>	Dual sealed environment proof	15A, 125/250 Vac
<b>63</b>	Dual high temp. 300°F	15A, 125/250 Vac
<b>64</b>	Dual general purpose	15A, 125/250/480 Vac 1/2A, 125 Vdc 1/4A, 250 Vdc
<b>65</b>	Dual ammonia service	5A, 125/250 Vac
<b>70</b>	Dual low level, gold contacts	1A, 125 Vac

3 – ACTUATOR SEAL		
Code and Material	Process Temperature Limits °F <sup>(4)</sup>	
V – Viton	20 to 300	Viton O-Ring, Stainless Steel Pressure Connection

4 – OPTIONS
Use table from page 7

5 – STANDARD PRESSURE RANGE		
Range psi	Adjustable Setpoint Limits psi	Proof Pressure psi
1000	150-1000	12,000
2000	300-2000	12,000
3000	450-3000	12,000
5000	750-5000	10,000
7500	1125-7500	100,000

### NOTES:

- 1 Standard switch.
- 2 Dual switches are 2 SPDT snap-action switches, not independently adjustable.
- 3 Estimated dc rating, 0.4A, 120 Vdc (not UL listed).
- 4 Ambient operating temperature limits –20 to 150°F, all styles, setpoint shift of ±1% of range per 50°F temperature change is normal. Switches are calibrated at 70° F reference.

# B-Series Switches – Pressure, Differential Pressure, Temperature & Hydraulic

## OPTIONAL FEATURES AND ACCESSORIES

B-SERIES SWITCH OPTIONS								
Code	Description	Applicable Switch Series						
		Pressure		Differential Pressure		Temperature	H	Notes
		(psi)	(in. H <sub>2</sub> O)	(psi)	(in. H <sub>2</sub> O)	All Ranges		
XBP	Wall Mounting Bracket in. H <sub>2</sub> O		•		•			
XBX	1/2" Male NPT Bushing					•		
XCH	Chained Cover	•	•	•	•	•	•	
XC8	CSA Approval	•	•	•	•	•		11
XCN	ATEX Directive 94/9/EC EEx d IIC T6	•	•	•	•	•		
XD2	Dual Seal Rating (700 Series only)	•						
XFM	FM Approval – Single Element	•	•	•	•			17
	FM Approval – Dual Element	•	•	•	•			17
XFP	Fungus Proofing	•	•	•	•	•	•	
XFS	Factory Adjusted Setpoint	•	•	•	•	•	•	2
XG3	Belleville Actuator	•						16,17
XG5	UL Limit Control to 150" H <sub>2</sub> O				•			1, 17
XG6	UL Limit Control to 600 psi	•						1, 17
XG7	Secondary Chamber with Vent	•						13
XG8	Steam Limit Control to 300 psi	•						7
XG9	Fire Safe Welded Actuator	•						7
XHS	High Static Differential Pressure			•				15
XHX	High Pressure, 40 psi, (static) d/p only		•		•			
	160 psi (proof) d/p only							
	100 psi (proof) pressure only (" H <sub>2</sub> O)							
XJK	Left Conduit Connection	•	•	•	•	•	•	9
XJL	3/4" to 1/2" Reducing Bushing	•	•	•	•	•	•	
XJM	Metric Electrical Conduit Connection M20 x 1.5	•	•	•	•	•	•	
XK3	Terminal Block (700 Series only)	•	•	•	•	•		6
XLE	6 foot Leads on the Micro Switch	•	•	•	•	•	•	
XNH	Tagging Stainless Steel	•	•	•	•	•	•	
XNN	Paper Tag	•	•	•	•	•	•	
XPK	Pilot Light(s) Top Mounted	•	•	•	•	•	•	4
XPM	3/4" Sealed Conduit Connection with 16" Lead Wires	•	•	•	•	•	•	
XTA	316 Stainless Steel Pressure Connection for in. H <sub>2</sub> O Range		•		•			
XTM	2" Pipe Mounting Bracket	•	•	•	•	•		
XUD	316 Stainless Steel Pressure Conn.			•				
XUX	IECEX Rating (700 Series only)	•	•	•	•	•		
X06	Pressure Connection: 1/2 NPT Male, 1/4 NPT Female	•	•	•	•			5
	316 Stainless Steel (Combination)							
X07	1/2 NPTF Press. Conn., 316 SS	•	•	•	•			10
X6B	Cleaned for Oxygen Service	•	•	•				3
	Diaphragm Seal	•	•	•	•			

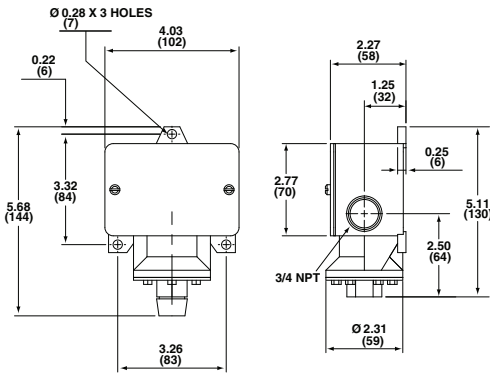
### NOTES:

- 1 Buna N and Viton diaphragm.
- 2 Advise static or working pressure for differential pressure switches.
- 3 Buna N cannot be cleaned for oxygen service.
- 4 N/A on 700 Series.
- 5 Standard with 1000 and 3000 psi ranges. Bottom connection only on DP in H<sub>2</sub>O ranges.
- 6 Terminal Blocks standard with 700 dual switches.
- 7 Stainless steel diaphragm only.
- 8 Pressure connection 1/4 NPTF.
- 9 Standard on 700 Series. N/A with DPDT element on 400 Series.
- 10 N/A with Monel diaphragm.
- 11 Standard on 400 Series.
- 12 N/A on 3000 psi range. Available with Teflon diaphragm only.
- 13 SS diaphragm required. Teflon diaphragm is the backup. NEMA 7 only.
- 14 Available in ranges vacuum to 600 psi. Not available with stainless steel or Monel diaphragm.
- 15 Buna N and Viton diaphragm – 15#D & 30#D only.
- 16 24, 32, 64 or 68 element only.
- 17 N/A on all combinations.
- 18 700 Series only.

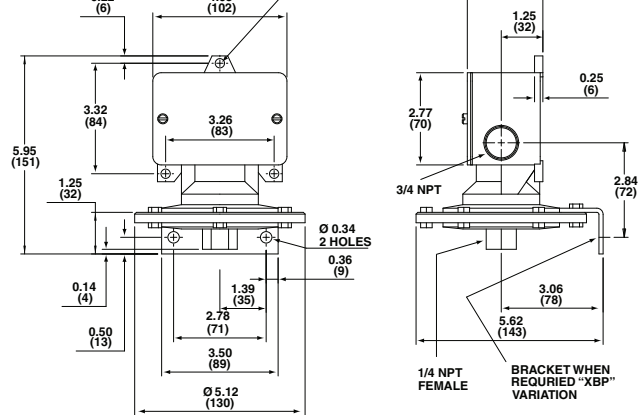
# B-Series Switches – Pressure, Differential Pressure, Temperature & Hydraulic

## Dimensions – 400 Series

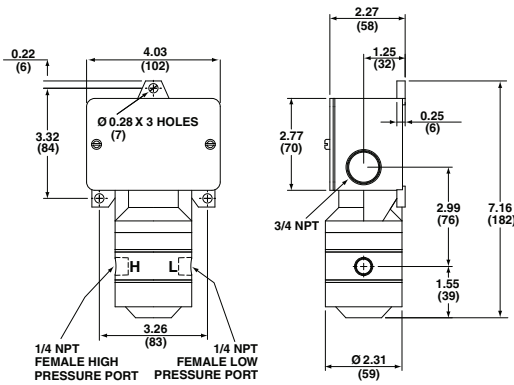
Pressure switch – psi ranges



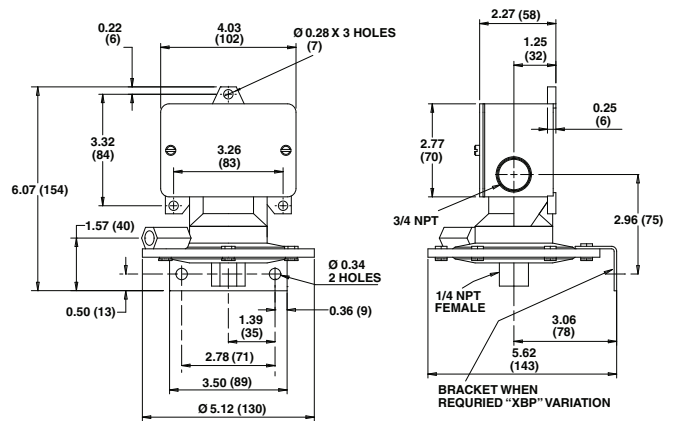
Pressure switch – inches of water ranges



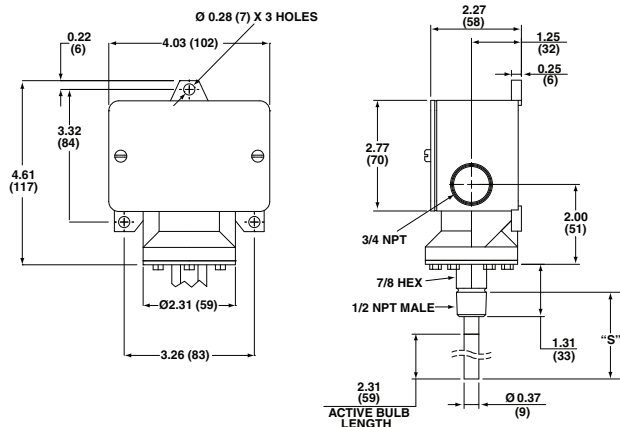
Differential pressure switch – psi differential ranges



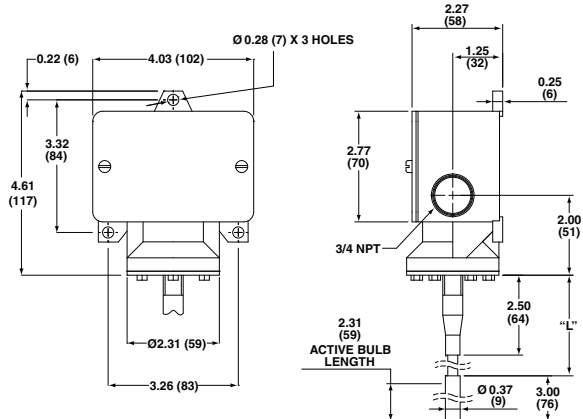
Differential pressure switch – inches of water ranges



Temperature switch – direct mount



Temperature switch – remote mount

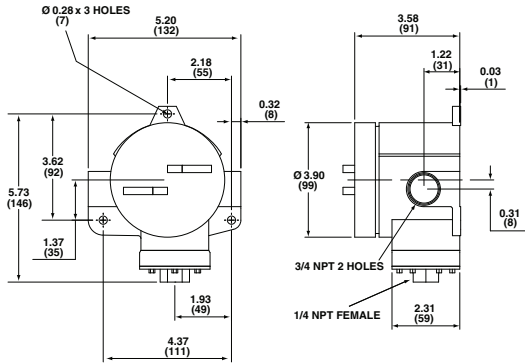




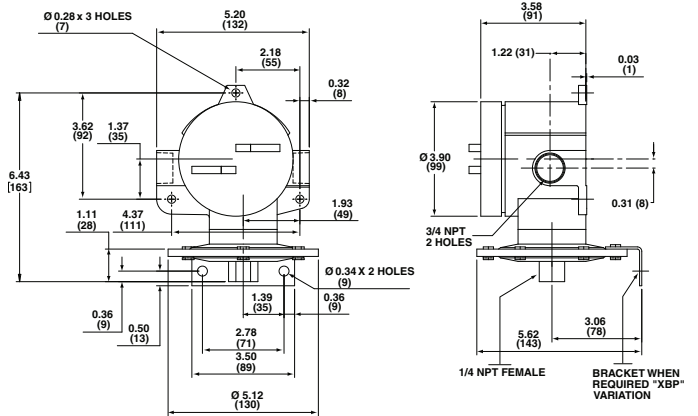
# B-Series Switches – Pressure, Differential Pressure, Temperature & Hydraulic

## Dimensions – 700 Series

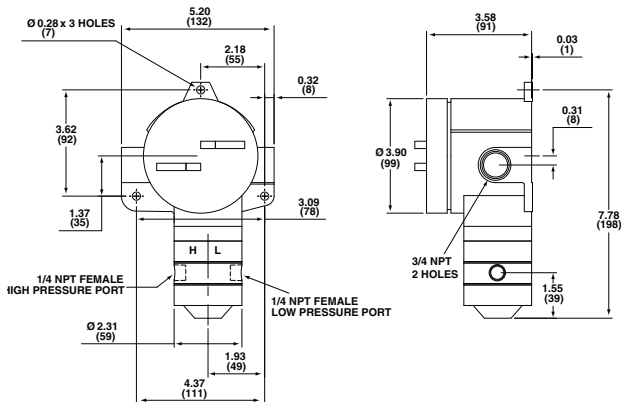
Pressure switch – psi ranges



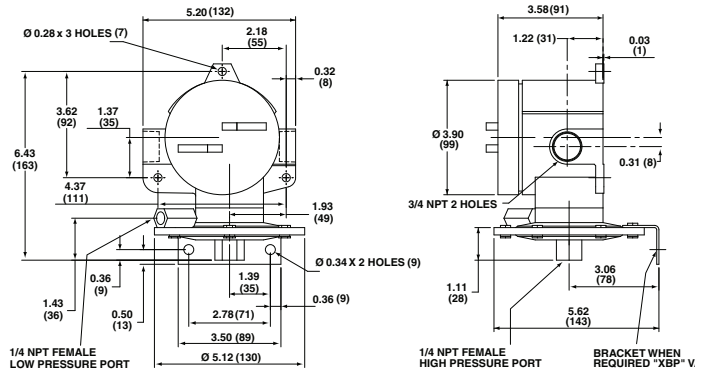
Pressure switch – inches of water ranges



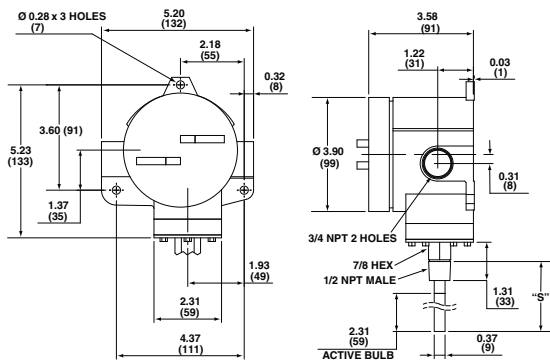
Differential pressure switch – psi differential ranges



Differential pressure switch – inches of water ranges



Temperature switch – direct mount



Temperature switch – remote mount

