

B/D/H-Series Switches Pressure, Differential Pressure & Hydraulic

FEATURES

- Adjustable setpoints 15-100% of range
- Fixed or limited adjustable deadband
- Wide selection of switch elements
- Explosion proof enclosure provides uncompromising protection
- Special designs for NACE & fire applications
- SIL 3 Capable (B and D series only)

TYPICAL USES

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



SPECIFICATIONS




| | | | |
|----------------------------|---|--|--|
| Setpoint: | Factory set or field adjustable | | |
| Accuracy: | ±1 % of full range (Additional setpoint shift of ±0,36 % of range per 10 K from initial setpoint set at 20 °C typical) | | |
| Enclosure Rating: | B4/H4 Hydraulic: B7: | IP66 IP66 | NEMA 4X NEMA 7/9 |
| Enclosure Material: | Epoxy coated aluminum (standard) Optional: 316 stainless steel (IP66 and NEMA 7/9 only) | | |
| Diaphragm Material: | Buna N, Viton, Teflon, Stainless steel, Monel® 400 | | |
| Process Connection: | ¼ NPT Female (standard) Optional: ½ NPT Female, ¼ NPT Female & ½ NPT Male Combo | | |
| Electrical Output: | SPDT or DPDT | | |
| Electrical Termination: | ¾ NPT Female (standard); Optional: ½ NPT Female, M20x1,5 Female | | |
| Ambient Temperature Range: | -28 °C to 65 °C (-20 °F to 150 °F) ATEX: -20 °C to 60 °C (-4 °F to 140 °F) All units calibrated at 20 °C (70 °F) | | |
| Process Temperature: | Buna N or Teflon diaphragm: -18 °C to 65 °C (0 °F to 150 °F) Viton diaphragm: -6 °C to 150 °C (20 °F to 300 °F) Stainless steel or Monel diaphragm -18 °C to 150 °C (0 °F to 300 °F) | | |
| Pressure Range: | Pressure: -1 to 210 bar (Vac to 3000 psi) Differential: 0 to 42 bar (0 to 600 psid) Hydraulic: 70 to 500 bar (1000 to 7500 psi) | | |
| Approvals: | UL: | E34743 (B4/D4) E38812 (B7/D7) | |
| | CSA: | 55541 | |
| | CSAE: | 21UKEX1056X | (B7/D7 with XCN) |
| | ATEX: | SIRA 02 ATEX 1391X IECEx SIR 14.0077X SIRA 04 ATEX 2081X IECEx SIR 16.0018X | (B7/D7 with XCN) (B7/D7 with XCEN6/7) |
| | UKCA: | UKCA 0518 CE 2813 | |
| | UKE: | CSAE 21 UKEX 2472X | |
| | FM: | CSAE 21 UKEX 1056X | |
| | | Limit Control and Steam Limit Control | |



KEY BENEFITS




- Highly reliable
- Designed for use in wide range of applications
- Pressure ranges from vacuum to 7500 psi / 500 bar

| | | | |
|---------------|-----------------------|------------|--------------------|
| Overpressure: | Check table at page 2 | | |
| Weight: | B4/H4: 0,7 kg | B7: 1,2 kg | B7 with YW: 2,4 kg |
| | D4: 1,6 kg | D7: 2,0 kg | D7 with YW: 3,2 kg |






FACTORY SEALED


 CLASS I DIV 1 GROUPS B, C, & D
 CLASS II DIV 1 GROUPS E, F, & G

Sira 02 ATEX 1391X
IECEx SIR 14.0077X
CSAE 21 UKEX 1056X




 0518 2813 II 2GD
 Ex db IIC T6 Gb
 Ex tb IIIC T85°C Db IP 6X
 (Ta = -20°C to +60°C)

Sira 04 ATEX 2081X
IECEx SIR 16.0018X
CSAE 21 UKEX 2472X




 0518 2813 II 1GD
 Ex ia IIC T4 Ga
 Ex ia IIIC T135°C Da IP6X
 (Ta = -20°C to +60°C)

B/D/H-Series Switches Pressure, Differential Pressure & Hydraulic

RANGES & DEAD BANDS / HYSTERESIS

| PRESSURE/VACUUM RANGES ⁽¹⁾ | | | OVERPRESSURE RATINGS | | APPROXIMATE DEADBAND SWITCH ELEMENT ^{(2) (4)} BUNA-N DIAPHRAGM | | | | |
|---|---|-------------------|----------------------|-----------|--|------------------|--------------------|------------------|-------------------|
| NOMINAL PRESSURE | | | PROOF PSI | BURST PSI | 20, 26, 27 | 21, 24, 31 | 50 | 22 | 32, 42 |
| Vacuum | | | | | | | | | |
| -30" Hg | -760mm Hg | -100 kPa | 250 | 400 | 0,3-0,7 | 1,5-4,0 | 0,5-2,2 | 0,4-1,5 | 2,1-4,2 |
| Compound | | | | | | | | | |
| -15" H ₂ O/ 15" H ₂ O | -375 mm H ₂ O/375 mm H ₂ O | -3,7 kPa/ 3,7 kPa | 20 | 35 | 0,15-0,75/ 0,15-0,75 | 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 ₂ O/ 30" H ₂ O | -760 mm H ₂ O/ 760 mm H ₂ O | -7,5 kPa/ 7,5 kPa | 20 | 35 | 0,30-0,60/ 0,30-0,60 | 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 | -760 mm Hg/ 1,0 kg/cm ² | -100 kPa/ 100 kPa | 250 | 400 | 0,5-1,0/ 0,3-0,7 | 2,0-3,0/ 0,5-2,5 | 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 | -760 mm Hg/ 2,0 kg/cm ² | -100 kPa/ 200 kPa | 250 | 400 | 1,0-1,5/ 0,3-0,8 | 3,0-6,0/ 1,0-3,5 | 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 | -760 mm Hg/ 4,0 kg/cm ² | -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/ 3,0-5,0 | 2,8-4,5/ 3,0-5,0 | 7,0-12,0/ 4,2-7,0 |
| Pressure | | | | | | | | | |
| 10 H ₂ O | 250 mm H ₂ 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 ₂ O | 750 mm H ₂ 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 ₂ O | 1500 mm H ₂ 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 ₂ O | 2500 mm H ₂ 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 ₂ O | 3750 mm H ₂ 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 ² | 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 ² | 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 ² | 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 ² | 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 ² | 1400 kPa | 1000 | 3000 | 1-3 | 5-13 | 2-9 | 3,0-7,5 | 7,0-18,2 |
| 400 psi | 28 kg/cm ² | 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 ² | 4200 kPa | 2400 | 3000 | 4-11 | 9-30 | 7-20 | 5,0-23,0 | 12,6-42 |
| 1000 psi | 70 kg/cm ² | 7000 kPa | 12000(5) | 18000 | 7-30 | 30-110 | 18-70 | 15-80 | 42-154 |
| 3000 psi | 210 kg/cm ² | 21000 kPa | 12000 | 18000 | 15-60 | 80-235 | 37-160 | 30-230 | 112-329 |

| DIFFERENTIAL PRESSURE RANGES | | | PRESSURE RATINGS | | APPROXIMATE DEADBAND SWITCH ELEMENT ^{(2) (3) (4)} BUNA-N DIAPHRAGM | | | | |
|------------------------------|--------------------------|----------|-------------------------|-----------|--|------------|------------|-----------|------------|
| NOMINAL PRESSURE | | | STATIC WORKING PRESSURE | PROOF PSI | 20, 26, 27 | 21, 24, 31 | 50 | 22 | 32, 42 |
| 30" H ₂ O | 750 mm H ₂ 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 ₂ O | 1500 mm H ₂ 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 ₂ O | 2500 mm H ₂ 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 ₂ O | 3750 mm H ₂ 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 ² | 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 ² | 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 ² | 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 ² | 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 ² | 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 ² | 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 ² | 4200 kPa | 1000 | 8000 | 20,0-40,0 | 80,0-150,0 | 30,0-115,0 | 30,0-56,0 | 12,0-210,0 |

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

- Deadbands given are for zero static working pressure.
- For approximate deadbands for dual switch elements, multiply the single switch element by 1,6.
- Proof pressure is 4000 psi with stainless steel and monel welded diaphragms.



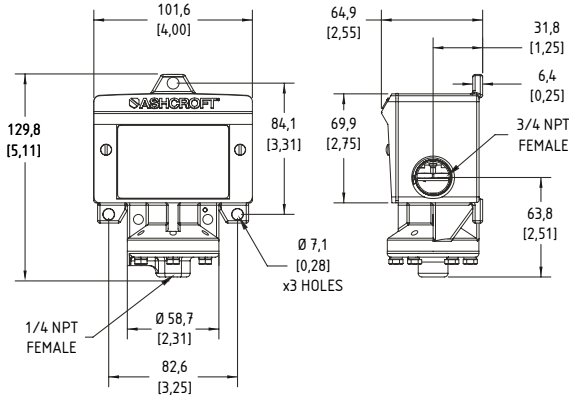
B/D/H-Series Switches

Pressure, Differential Pressure & Hydraulic

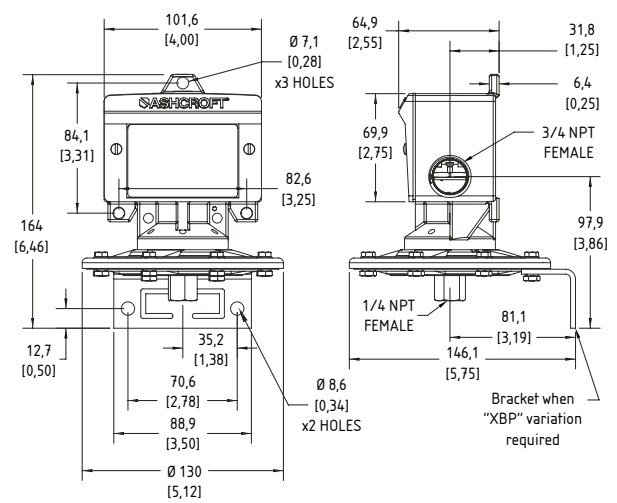
DIMENSIONS IN MM [INCH]

For reference only, consult Ashcroft for specific dimensional drawings

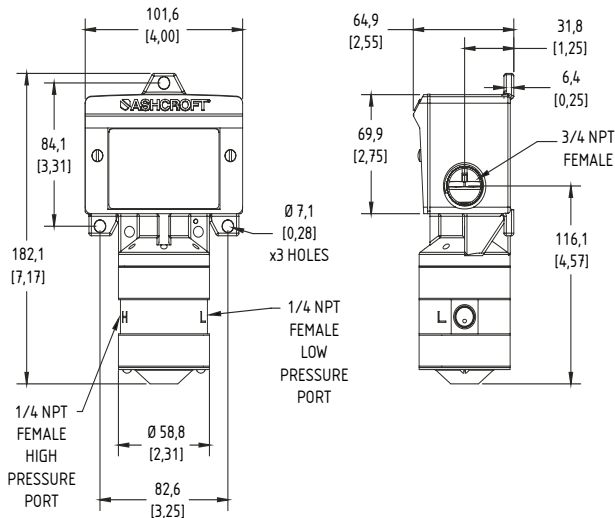
B4/H4 PRESSURE / HYDRAULIC PRESSURE SWITCH – PSI RANGES



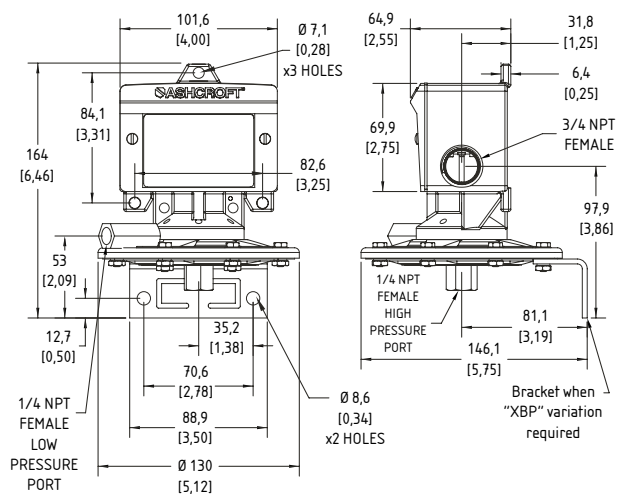
B4 PRESSURE SWITCH – INCHES OF WATER RANGES



D4 DIFFERENTIAL PRESSURE SWITCH – PSI DIFFERENTIAL RANGES



D4 DIFFERENTIAL PRESSURE SWITCH – INCHES OF WATER RANGES



**B4 - psi
H4 - all ranges**



B4 - inch H₂O



D4 - inch H₂O

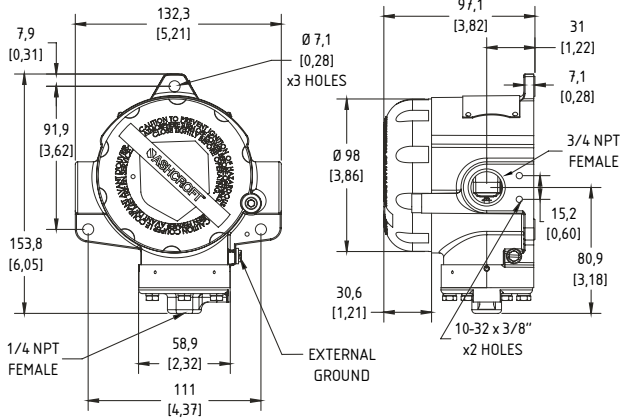


D4 - psid

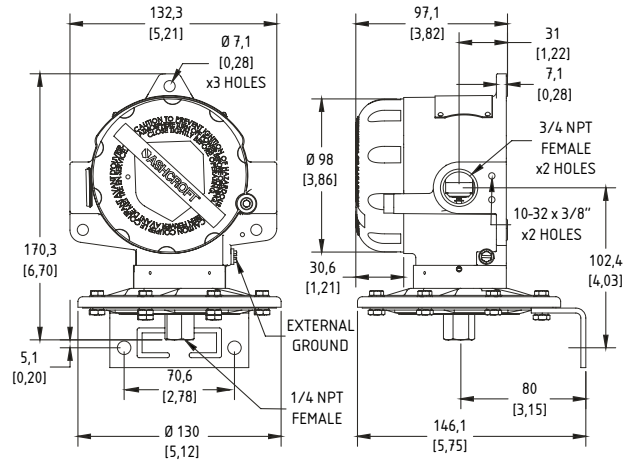


B/D/H-Series Switches
Pressure, Differential Pressure & Hydraulic

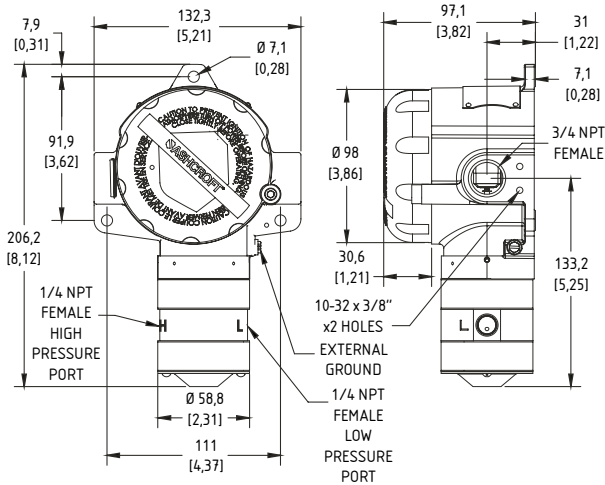
B7 PRESSURE SWITCH –
PSI RANGES



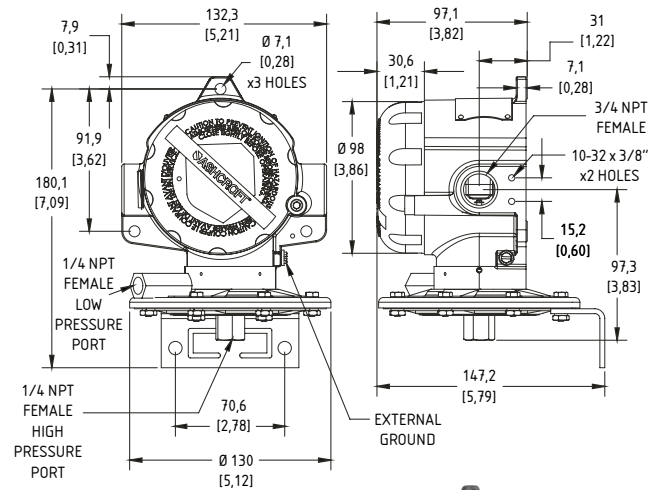
B7 PRESSURE SWITCH –
INCHES OF WATER RANGES



D7 DIFFERENTIAL PRESSURE SWITCH –
PSI DIFFERENTIAL RANGES



D7 DIFFERENTIAL PRESSURE SWITCH –
INCHES OF WATER RANGES



B7 - psi



B7 - inch H2O



D7 - inch H2O



D7 - psid



B7 - psi - YW



B7 - inch H2O - YW



D7 - inch H2O - YW



D7 - psid - YW



B/D/H-Series Switches Pressure, Differential Pressure & Hydraulic

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.

Pressure & Differential Pressure Switches

B-Series pressure, differential pressure and vacuum switches use two different actuators depending on setpoint requirements. For setpoints between 150 mbar and 210 bar (2 psi 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 70 bar (1000 psi) for maximum reliability. This design is available in 316 Stainless steel 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 10 mbar and 375 mbar (4,5 and 150 inches of H₂O) a large diaphragm is used for increased sensitivity in both pressure and differential pressure designs with good choice of materials of construction.

All standard models feature ± 1 % of range setpoint repeatability and a minimum of 400 % 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.



B-Series Switch Type B4 & B7 Pressure

| ORDERING CODE | EXAMPLE: | B4 | 24 | B | 60# | IP |
|---------------|----------|----|----|---|-----|----|
|---------------|----------|----|----|---|-----|----|

| | | | | | | |
|------------------|---|----|--|--|--|--|
| Enclosure | | | | | | |
| B4 | Pressure switch, watertight enclosure meets NEMA 3, 4, 4X, 13 and IP66 | B4 | | | | |
| B7 | Pressure switch, explosion-proof enclosure meets Div 1 & 2, NEMA 7 & 9 and IP66 | | | | | |

| | | | | | | |
|---|---|--|----|--|--|--|
| Switch Element Selection - UL/CSA Listed SPDT | | | | | | |
| 20 | Narrow deadband AC, 15 A - 125/250 VAC, estimated DC rating 0,4 A - 120 VDC (not UL listed) | | | | | |
| 21 | Ammonia service, 5 A - 125/250 VAC | | | | | |
| 22 | Hermetically sealed switch, narrow deadband, 5 A - 125/250 VAC, estimated DC rating 2,5 A - 28 VDC (not UL listed) | | | | | |
| 23 | Heavy duty AC, 22 A - 125/250 VAC | | | | | |
| 24 | General purpose, 15A - 125/250/480 VAC; 0,5 A - 125 VDC; 0,25 A - 250 VDC; 6 A - 30 VDC (Standard switch) | | 24 | | | |
| 25 | Heavy duty DC, 10 A - 125 VAC or DC, 93 W - 125 VAC or DC | | | | | |
| 26 | Sealed environment proof, 15 A - 125/250 VAC, estimated DC rating 0,4 A - 120 VDC (not UL listed) | | | | | |
| 27 | High temperature 150 °C (300 °F), 15 A - 125/250 VAC | | | | | |
| 28 | Manual reset trip on, increasing 15 A - 125/250 VAC (Not available with type B7 enclosure) | | | | | |
| 29 | Manual reset trip on, decreasing, 15 A - 125/250 VAC (Not available with type B7 enclosure) | | | | | |
| 31 | Low level (gold) contacts, 1 A - 125 VAC | | | | | |
| 32 | Hermetically sealed switch, general purpose, 11 A - 125/250 VAC, 5 A - 30 VDC | | | | | |
| 42 | Hermetically sealed switch, gold contacts, 1 A - 125 VAC | | | | | |
| 50 | Variable deadband, 15 A - 125/250 VAC | | | | | |
| Switch Element Selection - UL/CSA Listed Dual (2 SPDT) | | | | | | |
| 61 | Dual narrow deadband, 15 A - 125/250 VAC, estimated DC rating, 0,4 A - 120 VDC (not UL listed) | | | | | |
| 62 | Dual sealed environment proof, 15 A - 125/250 VAC, estimated DC rating 0,4 A - 120 VDC (not UL listed) | | | | | |
| 63 | Dual high temperature 150 °C (300 °F), 15 A - 125/250 VAC | | | | | |
| 64 | Dual general purpose, 15A - 125/250/480 VAC; 0,5 A - 125 VDC; 0,25 A - 250 VDC; 6 A - 30 VDC | | | | | |
| 65 | Dual ammonia service, 5 A - 125/250 VAC | | | | | |
| 67 | Dual hermetically sealed switch, narrow deadband, 5 A - 125/250 VAC, estimated DC rating, 2,5 A - 28 VDC (Wires cannot be terminated inside type B4 switch enclosure and not UL listed) | | | | | |
| 68 | Dual hermetically sealed switch, general purpose, 11 A - 125/250 VAC, 5 A - 30 VDC (Wires cannot be terminated inside type B4 switch enclosure) | | | | | |
| 70 | Dual low level gold contacts, 1 A - 125 VAC | | | | | |
| 71 | Dual hermetically sealed switch, gold contacts, 1 A - 125 VAC (Wires cannot be terminated inside type B4 switch enclosure) | | | | | |

| | | | | | | |
|----------------------|--|--|--|--|--|---|
| Actuator Seal | | | | | | B |
|----------------------|--|--|--|--|--|---|

| | Material | Process temperatures °C °F | Ranges | | | | Notes |
|---|------------|----------------------------------|-----------------------------|-----------------------|------------------------|-------------------------|--|
| | | | Vacuum "H ₂ O | 0-42 bar 0-600 psi | 0-70 bar 0-1000 psi | 0-210 bar 0-3000 psi | |
| B | Buna | -18/65 (0/150) | • | • | • | • | Stainless steel process connection |
| V | Viton | -7/150 (20/300) | • | • | • | • | Stainless steel process connection |
| T | Teflon | -18/65 (0/150) | • | • | • | • | Stainless steel process connection |
| S | St.st 316L | -18/150 (0/300) | | • | • | | Available on pressure only, Stainless steel process connection |
| P | Monel | -18/150 (0/300) | | • | • | | Available on pressure only |

| | | | | | | |
|--|--|--|--|--|--|--|
| Range (coding examples only, see range table on page 2 for all standard ranges) | | | | | | |
|--|--|--|--|--|--|--|

| | | | | | | |
|-----|--------|--|--|--|--|-----|
| 60# | 60 psi | | | | | 60# |
|-----|--------|--|--|--|--|-----|

continued at page 7



B-Series Switch Type B4 & B7 Pressure

ORDERING CODE **EXAMPLE:** **B4** **24** **B** **60#** **IP** **02** **X**
Case Style

| | | |
|------|---|----|
| IP | Standard case IP66 | IP |
| CN | ATEX, UKEx and IECEx: Ex db IIC T6 Gb and Ex tb IIIC T85°C Db IP6X (Ta = -20°C to +60°C) with electrical connection ¾ NPT female (only admissible for type B7) | |
| CEN6 | ATEX, UKEx and IECEx: Ex ia IIC T4 Ga and Ex ia IIC T135°C Da IP6X (Ta = -20°C to +60°C) with standard electrical connection ¾ NPT female (only admissible for type B7) | |
| CEN7 | ATEX, UKEx and IECEx: Ex ia IIC T4 Ga and Ex ia IIC T135°C Da IP6X (Ta = -20°C to +60°C) with cable gland M20 (only admissible for type B7) | |
| IPM1 | Case with protection IP66 and DIN Hirschmann connector | |
| UL | UL listed NEMA 3, 4, 4x, 13 and IP66 (only admissible for type B4) | |

Process Connection Size

| | |
|----|--|
| 02 | ¼ NPT male (with adapter) |
| 05 | 7/16-20 SAE female (only admissible for compound ranges and ranges ≤ 60 psi) |
| 06 | ½ NPT male / ¼ NPT female (standard for ranges ≥ 1000 psi) |
| 07 | ½ NPT female (inH2O ranges and ranges ≥ 1000 psi with adapter) |
| 13 | G ¼ B male (with adapter) |
| 15 | G ½ B male (with adapter) |
| 16 | M20x1,5 male (with adapter) |
| 25 | ¼ NPT female (only for ranges ≤ 600 psi) |
| 26 | G ¼ female (with adapter) |
| 51 | G ½ female (with adapter) |

Options (If choosing an option(s) must include a "X")

X_

Electrical Connection

| | |
|--------|--|
| = | ¾ NPT female (standard) |
| CEN3 | Cable gland M20, Ex d (only admissible for type B7) |
| G15 | Reducing bushing ¾ NPT female to G ½ female |
| HAN7DS | Harting connection HAN 7D with silver contacts (only admissible for type B4) |
| HAN7DG | Harting connection HAN 7D with gold contacts (only admissible for type B4) |
| JL | Reducing bushing ¾ NPT female to ½ NPT female |
| JM | Reducing bushing ¾ NPT female to M20x1,5 female |
| KV1 | Plastic cable gland IP65, PG 9 (only admissible for type B4) |
| KV2 | Plastic cable gland IP65, PG 11 (only admissible for type B4) |
| KV3 | Plastic cable gland IP65, PG 13,5 (only admissible for type B4) |
| KV4 | Plastic cable gland IP65, PG 16 (only admissible for type B4) |
| KV9 | Cable gland EEx d II (Hawke UK), ¾ NPT male (only admissible for type B7) |
| KV42 | Cable gland EEx d II PG 13,5 (only admissible for type B7) |
| KV52 | Plastic cable gland PG 13,5 (only admissible for type B4) |
| LE | 2 m (6 ft) leads on micro switch |
| M25 | Reducing bushing ¾ NPT female to M25x1,5 female |
| PM | Wire leads potted in conduit single/dual |

Electrical Connection Options

| | |
|----|---|
| K3 | Terminal block (only admissible for type B7; Standard with 2 SPDT and microswitch 22, 23, 31, 32, and 42) |
| PJ | 24 VDC pilot light single/dual (only admissible for type B4) |
| PK | Pilot lights (neon) top mounted single/dual (only admissible for type B4) |

continued at page 8



D-Series Switch Type D4 & D7 Differential Pressure

| ORDERING CODE | | EXAMPLE: | D4 | 24 | B | 100# | = |
|--|---|----------------------|----------|------------------------|---------------------------|----------------------|------|
| Enclosure | | | | | | | |
| D4 | Differential pressure switch, water-tight enclosure, NEMA 3, 4, 4X, 13 and IP66 | | D4 | | | | |
| D7 | Differential pressure switch, explosion- proof enclosure, Div 1 & 2, NEMA 7 & 9 and IP66 | | | | | | |
| Switch Element Selection - UL/CSA Listed SPDT | | | | | | | |
| 20 | Narrow deadband AC, 15 A - 125/250 VAC, estimated DC rating 0,4 A - 120 VDC (not UL listed) | | | | | | |
| 21 | Ammonia service, 5 A - 125/250 VAC | | | | | | |
| 22 | Hermetically sealed switch, narrow deadband, 5 A - 125/250 VAC, estimated DC rating 2,5 A - 28 VDC (not UL listed) | | | | | | |
| 23 | Heavy duty AC, 22 A - 125/250 VAC | | | | | | |
| 24 | General purpose, 15A - 125/250/480 VAC; 0,5 A - 125 VDC; 0,25 A - 250 VDC; 6 A - 30 VDC (Standard switch) | | | 24 | | | |
| 25 | Heavy duty DC, 10 A - 125 VAC or DC, 93 W - 125 VAC or DC (Not available for type B7 and psid ranges) | | | | | | |
| 26 | Sealed environment proof, 15 A - 125/250 VAC, estimated DC rating 0,4 A - 120 VDC (not UL listed) | | | | | | |
| 27 | High temperature 150 °C (300 °F), 15 A - 125/250 VAC | | | | | | |
| 28 | Manual reset trip on, increasing 15 A - 125/250 VAC (Not available with type B7 enclosure) | | | | | | |
| 29 | Manual reset trip on, decreasing, 15 A - 125/250 VAC (Not available with type B7 enclosure) | | | | | | |
| 31 | Low level (gold) contacts, 1 A - 125 VAC | | | | | | |
| 32 | Hermetically sealed switch, general purpose, 11 A - 125/250 VAC, 5 A - 30 VDC | | | | | | |
| 42 | Hermetically sealed switch, gold contacts, 1 A - 125 VAC | | | | | | |
| 50 | Variable deadband, 15 A - 125/250 VAC | | | | | | |
| Switch Element Selection - UL/CSA Listed Dual (2 SPDT) | | | | | | | |
| 61 | Dual narrow deadband, 15 A - 125/250 VAC, estimated DC rating, 0,4 A - 120 VDC (not UL listed) | | | | | | |
| 62 | Dual sealed environment proof, 15 A - 125/250 VAC, estimated DC rating 0,4 A - 120 VDC (not UL listed) | | | | | | |
| 63 | Dual high temperature 150 °C (300 °F), 15 A - 125/250 VAC | | | | | | |
| 64 | Dual general purpose, 15A - 125/250/480 VAC; 0,5 A - 125 VDC; 0,25 A - 250 VDC; 6 A - 30 VDC | | | | | | |
| 65 | Dual ammonia service, 5 A - 125/250 VAC | | | | | | |
| 67 | Dual hermetically sealed switch, narrow deadband, 5 A - 125/250 VAC, estimated DC rating, 2,5 A - 28 VDC (Wires cannot be terminated inside type B4 switch enclosure and not UL listed) | | | | | | |
| 68 | Dual hermetically sealed switch, general purpose, 11 A - 125/250 VAC, 5 A - 30 VDC (Wires cannot be terminated inside type B4 switch enclosure) | | | | | | |
| 70 | Dual low level gold contacts, 1 A - 125 VAC | | | | | | |
| 71 | Dual hermetically sealed switch, gold contacts, 1 A - 125 VAC (Wires cannot be terminated inside type B4 switch enclosure) | | | | | | |
| Actuator Seal | | | | | | | |
| | | Process temperatures | | Ranges | | Notes | |
| | | °C | °F | 0-6,2 bar 15-90 psi | 7 - 42 bar 100-600 psi | | |
| B | Buna | -18/65 | (0/150) | • | • | Steel, nickel plated | |
| V | Viton | -7/150 | (20/300) | • | • | Steel, nickel plated | |
| T | Teflon | -18/65 | (0/150) | • | • | Steel, nickel plated | |
| S | St.st 316L | -18/150 | (0/300) | • | | Steel, nickel plated | |
| Range (coding examples only, see range table on page 2 for all standard ranges) | | | | | | | |
| 100# | 100 psi | | | | | | 100# |

continued at page 10



H-Series Switch Type H4 Hydraulic Pressure

ORDERING CODE **EXAMPLE:** H4 24 V 5000#

Enclosure

H4 Hydraulic pressure switch, watertight enclosure meets NEMA 3, 4, 4X, 13 and IP66

Switch Element Selection - UL/CSA Listed SPDT

- 20 Narrow deadband AC, 15 A - 125/250 VAC, estimated DC rating 0,4 A - 120 VDC (not UL listed)
- 22 Hermetically sealed switch, narrow deadband, 5 A - 125/250 VAC, estimated DC rating 2.5 A - 28 VDC (not UL listed)
- 23 Heavy duty ac, 22 A - 125/250 VAC
- 24 General purpose, 15A - 125/250/480 VAC; 0.5 A - 125 VDC; 0.25 A - 250 VDC; 6 A - 30 VDC (Standard switch)
- 25 Heavy duty DC, 10 A - 125 VAC or DC, 93 W - 125 VAC or DC
- 26 Sealed environment proof, 15 A - 125/250 VAC, estimated DC rating 0.4 A - 120 VDC (not UL listed)
- 27 High temperature 150 °C (300 °F), 15 A - 125/250 VAC
- 28 Manual reset trip on, increasing 15 A - 125/250 VAC
- 29 Manual reset trip on, decreasing, 15 A - 125/250 VAC
- 32 Hermetically sealed switch, general purpose, 11 A - 125/250 VAC, 5 A - 30 VDC

Switch Element Selection - UL/CSA Listed Dual (2 SPDT)

- 61 Dual narrow deadband, 15 A - 125/250 VAC, estimated DC rating, 0.4 A - 120 VDC (not UL listed)
- 62 Dual sealed environment proof, 15 A - 125/250 VAC, estimated DC rating 0.4 A - 120 VDC (not UL listed)
- 63 Dual high temp. 300°F, 15 A - 125/250 VAC
- 64 Dual general purpose, 15A - 125/250/480 VAC; 0.5 A - 125 VDC; 0.25 A - 250 VDC; 6 A - 30 VDC
- 65 Dual ammonia service, 5 A - 125/250 VAC
- 70 Dual low level gold contacts, 1 A - 125 VAC

Actuator Seal

| Material | Process temperatures | | Ranges | Notes |
|----------|----------------------|----------|-----------------------------|---|
| | °C | °F | 70-500 bar 1000-7500 psi | |
| V Viton | -7/150 | (20/300) | • | Viton O-ring, stainless steel pressure connection |

Range 5000#

| Range | | | Adjustable Setpoint | Proof Pressure |
|-------|--------------------|-----|---------------------|----------------|
| psi | kg/cm ² | MPa | psi | psi |
| 1000 | 70 | 7 | 150 - 1000 | 12000 |
| 2000 | 140 | 14 | 300 - 2000 | 12000 |
| 3000 | 210 | 21 | 450 - 3000 | 12000 |
| 5000 | 345 | 34 | 750 - 5000 | 10000 |
| 7500 | 500 | 50 | 1125 - 7500 | 10000 |

continued at page 13



