

## Pressure switch series B4 and B7

General purpose or Ex-proof according UL or ATEX (Ex d or EEx ia)  
Accuracy:  $\pm 1\%$



### Features

- Ambient temperature up to 60 °C for Ex applications
- $\text{Ex}$  II 2 GD or  $\text{Ex}$  II 1 GD
- Class 1 Division 1 Gr. B, C and D according UL
- Protection IP54, IP66 or NEMA 4, 4X, 7, 9 and 13 (UL)
- Wetted parts available in several materials
- High proof pressure

### Ranges

-37,5/+37,5 mbar up to 210 bar  
-15/+15 in. H<sub>2</sub>O up to 3000 psi

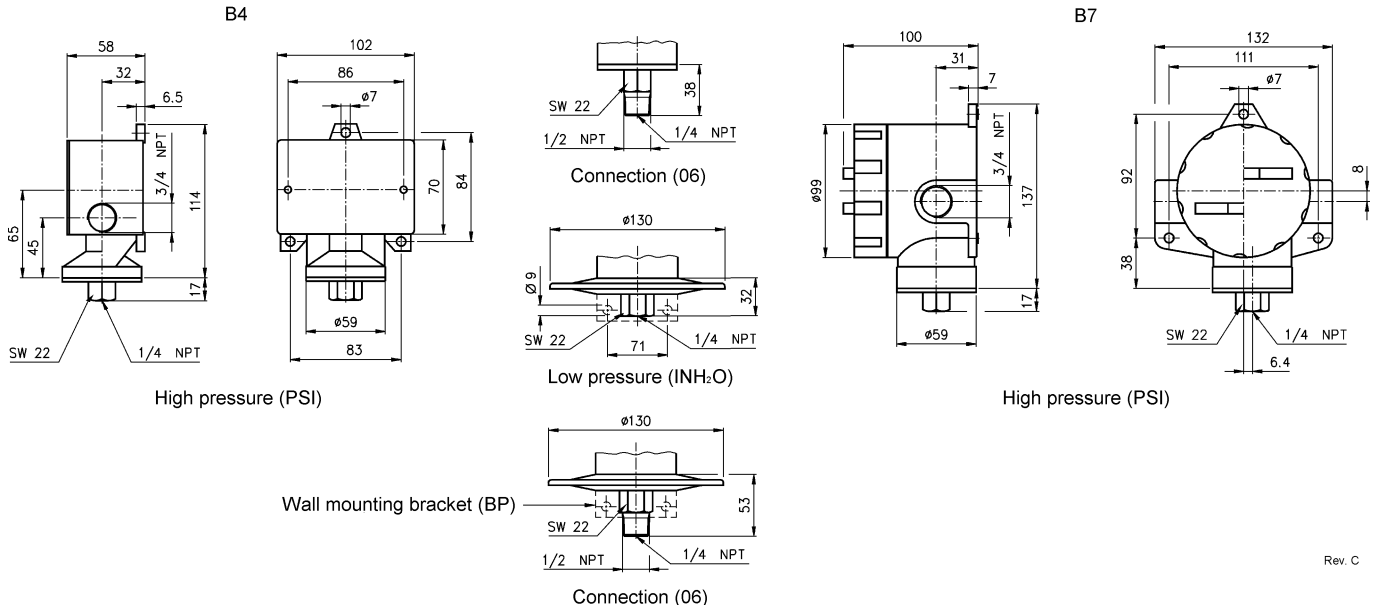
### Applications

Chemical and petrochemical industry  
Machine and apparatus construction  
Food and beverage industry  
Pulp and paper industry



| Technical specification                              | B4 series   | B7 series   |   |
|--|---|---|---|
| Construction   | Weatherproof  | Ex-proof according UL<br>CSA on request   | Ex-proof according<br>EN 60079-0, -1, -31<br>EN 50014, EN 50020 |
| Switch functions                                     | One setpoint, single pole double throw (SPDT) or 2 times SPDT (2SPDT)   |   |   |
| Adjustable range                                     | From 15 % to 100 %, below 15 % consult factory  |   |   |
| Deadband   | From 0,5 % to 15 % F.S., depending on material, range and microswitch   |   |   |
| Measuring principle                                  | Diaphragm-piston-cylinder-system  |   |   |
| Range in mbar  | 25 75 150 250 375 -37,5/37,5 -75/75   | 70 140 210  | -1/0 -1/1 -1/2 -1/4   |
| Range in bar   | 1 2 4 7 14 28   | 42 70 140 210   | -1/0 -1/1 -1/2 -1/4   |
| Limits (pressure ranges)                             | mbar vacuum 1 to 4 bar 7 to 14 bar  | 28 to 42 bar  | 70 to 210 bar   |
| Proof pressure in bar                                | 1,4 17 35 69  | 165   | 827   |
| Burst pressure in bar                                | 2,4 28 103 207  | 207   | 1240  |
| Pressure type  | Gauge, vacuum and compound  |   |   |
| Process connection                                   | $\frac{1}{4}$ NPT female, $\frac{1}{2}$ NPT male/ $\frac{1}{4}$ NPT female (standard for $\geq 70$ bar)<br>$\frac{1}{2}$ NPT female, G $\frac{1}{2}$ B male, M20x1,5, others on request (metric connections with adapter) |   |   |
| Connection location                                  | Lower   |   |   |
| Material   | Stainless steel 316 (1.4401), optional Monel  |   |   |
| Pressure connection                                  | For mbar ranges steel epoxy coated standard, stainless steel on request   |   |   |
| Diaphragm  | Buna N, Viton (max. 70 bar), Teflon, stainless steel 316 (1.4401) or Monel (stainless steel and Monel only from 1 bar to 70 bar)  |   |   |
| Housing  | Aluminum, epoxy coated black  |   |   |
| Accuracy   | 1,0 % F.S.  |   |   |
| <b>Electrical specification</b>                      |   |   |   |
| Microswitch ratings                                  | From 6 A 30 VDC up to 22 A 250 VAC (see microswitch table)  |   |   |
| Flameproof and dust ignition protection by enclosure | Class 1 Div. 1 Gr. B, C and D<br>Class 2 Div. 1 Gr. E, F and G  | $\text{Ex}$ II 2GD<br>Ex d IIC T6 Gb<br>Ex t IIIC T85°C Db IP6X<br>Sira 02 ATEX 1391X |   |
| Intrinsically safe                                   |   | EEx ia IIC T4<br>Sira 04 ATEX 2081  |   |
| Electrical connection                                | $\frac{3}{4}$ NPT female, optional cable glands, $\frac{1}{2}$ NPT with reducer bushing, M20x1,5, others on request   |   |   |
| <b>General specification</b>                         |   |   |   |
| Permissible  | -25 ... 60 °C   |   |   |
| Ambient temperature                                  | -25 ... 65 °C   |   |   |
| Medium temperature                                   | -20 ... 60 °C   |   |   |
| Storage temperature                                  | Buna N and Teflon -18 ... 65 °C, Viton -7 ... 150 °C, stainless steel and Monel -18 ... 150 °C<br>(Medium temperature of ATEX approved switches is restricted due to temperature class.)                                  |   |   |
| Effect   | -40 ... 60 °C<br>Max. 0,4 % / 10 K ref. 20 °C   |   |   |
| Protection according UL                              | NEMA 4, 4X and 13   | NEMA 7 and 9  |   |
| Protection according EN 60 529/IEC 529               | IP54, optional IP66   | IP66  |   |
| CE-mark  | Low voltage regulations EN 61 010-1, EN 60 947-1  |   |   |
| Mounting   | Standard stem, wall (BP) or 2" pipe mounting (TM)   |   |   |
| Weight mbar/bar in kg                                | 1,2/0,7   | 1,6/1,2   |   |
| Accessories, options                                 | Diaphragm seals, valves, adapters, NACE   |   |   |

## General dimensions in mm



## Order information

| Switch element   | Material actuator seal   | Range  | Engineering unit                                    | Protection  | Process connection                                    | Electrical connection  | Options   |
|--|--|--|---|---|---|--|---|
| <b>SPDT</b><br><b>(20)</b> Narrow deadband <sup>1)</sup><br>(15 A 250/480 VAC, 0,4A 120VDC)  | <b>(B)</b> Buna N <sup>1)</sup><br><b>(V)</b> Viton <sup>2)</sup>  | <b>-15/ 15</b><br><b>-30/ 30</b>   | <b>INH2O</b>  | <b>(IP)</b> Standard<br>B4 IP54<br>B7 IP66                            | <b>(25)</b> ¼ NPT female                              | <b>(=)</b> Standard  | <b>(NH)</b> Tagging wired   |
| <b>(21)</b> Ammonia service<br>(5A 250 VAC, 6 A 30 VDC)  | <b>(T)</b> Teflon <sup>1)</sup>  | <b>-30/ 0</b><br><b>-30/ 15</b>  | <b>INHG/PSI</b>                                     | <b>(IP65)</b> IP66 (for B4)   | <b>(06)</b> ¼ NPT female/<br>½ NPT male <sup>1)</sup> | <b>(JL)</b> ¾ to ½ NPT female reducing bushing                       | <b>(FS)</b> Factory adjusted set-point  |
| <b>(22)</b> Hermetically sealed<br>(5 A 250 VAC)   | <b>(S)</b> 316<br>(1.4401) <sup>3)</sup>   | <b>-30/ 30</b><br><b>-30/ 60</b>   |   | <b>(UL)</b> UL approval<br>B4 NEMA 4<br>B7 NEMA 7 & 9                 | <b>(07)</b> ½ NPT female                              | <b>(JM)</b> ¾ NPT to M20x1,5 female reducing bushing                 | <b>(6B)</b> Oxygen cleaned<br>(not for Buna N diaphragm; in. H <sub>2</sub> O ranges only with option TA) |
| <b>(23)</b> Heavy duty AC<br>(22 A 250 VAC)  | <b>(P)</b> Monel <sup>3)</sup>   | <b>10</b><br><b>30</b><br><b>60</b><br><b>100</b><br><b>150</b>  | <b>INH2O</b>  | <b>(CEN3)</b> ATEX Ex d with cable gland Ex d PG13,5 (only for B7)    | <b>(15)</b> G ½ B male <sup>2)</sup>                  | <b>(K3)</b> Terminal block (standard for B7 with 2xSPDT, not for B4) | <b>(TM)</b> 2" pipe mounting bracket  |
| <b>(24)</b> General purpose <sup>1)</sup><br>(15 A 250 VAC, 6 A 30 VDC)  |  |  |   | <b>(CEN4)</b> ATEX Ex d and Ex t ¾ NPT thread female (only for B7)    | <b>(16)</b> M20x1,5 male <sup>2)</sup>                | <b>Only for protection IP</b>  | <b>(TA)</b> 316 (1.4401) pressure connection for in. H <sub>2</sub> O ranges                              |
| <b>(26)</b> Sealed environment proof <sup>1)</sup><br>(15 A 250 VAC, 0,4A 120VDC)  |  |  |   | <b>(CEN6)</b> ATEX EEx ia ¾ NPT thread female (only for B7)           |   | <b>(KV2)</b> Plastic cable gland IP65, PG11                          | <b>(BP)</b> Wall mounting bracket for in. H <sub>2</sub> O ranges   |
| <b>(27)</b> High temp. (max. 150 °C)<br>(15 A 250 VAC)   |  | <b>15</b><br><b>30</b><br><b>60</b><br><b>100</b><br><b>200</b><br><b>400</b><br><b>600</b><br><b>1000</b><br><b>2000</b><br><b>3000</b> | <b>PSI</b>  | <b>(CEN7)</b> ATEX EEx ia with cable gland EEx d PG13,5 (only for B7) |   | <b>(KV3)</b> Plastic cable gland IP65, PG13,5                        | <b>(MD)</b> Metric ranges   |
| <b>(31)</b> Low level (gold) contacts<br>(1 A 125 VAC, 500mA 28VDC)  |  |  |   |   |   | <b>(KV4)</b> Plastic cable gland IP65, PG16                          |   |
| <b>(32)</b> Hermetically sealed general purpose<br>(11 A 250 VAC, 5 A 28 VDC)  |  |  |   |   |   | <b>(KV52)</b> Plastic cable gland PG13,5                             |   |
| <b>(42)</b> Hermetically sealed, gold contacts (1 A 125 VAC)   |  |  |   |   |   |  |   |
| <b>(50)</b> Variable deadband<br>(15 A 250 VAC)  |  |  |   |   |   |  |   |
| <b>2xSPDT</b><br><b>(61)</b> see code (20)<br><b>(62)</b> see code (26)<br><b>(63)</b> see code (27)<br><b>(64)</b> see code (24)<br><b>(65)</b> see code (21)<br><b>(67)</b> see code (22) (not B4 series)<br><b>(68)</b> see code (32) (not B4 series)<br><b>(70)</b> see code (31)<br><b>(71)</b> see code (42) (not B4 series) | <sup>1)</sup> max. medium temperature -18 ... 65 °C<br><sup>2)</sup> max. medium temperature -7 ... 150 °C<br><sup>3)</sup> max. medium temperature -18 ... 150 °C only ranges from 15 to 1000 psi |  |   |   |   |  |   |
| <sup>1)</sup> VDC rating not UL listed   |  |  | Note the range can also be specified in mbar or bar |   | <sup>2)</sup> with Adapter                            |  |   |

## Order example

| Type | Switch element | Material actuator seal | Range | Engineering unit | Protection | Process connection | Electrical connection | Option |
|------|----------------|------------------------|-------|------------------|------------|--------------------|-----------------------|--------|
| B7   | 24             | B                      | 100   | PSI              | UL         | 25                 | JL                    | NH     |

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