



**BOURDON**  
The Original by Baumer

### Main Features

- Excellent repeatability
- Dead band adjustment for regulation
- Fix dead band for control and alarm

### Applications

- Energy safety equipment
- Power generation safety equipment
- Pressurized chambers control
- Liquid level control



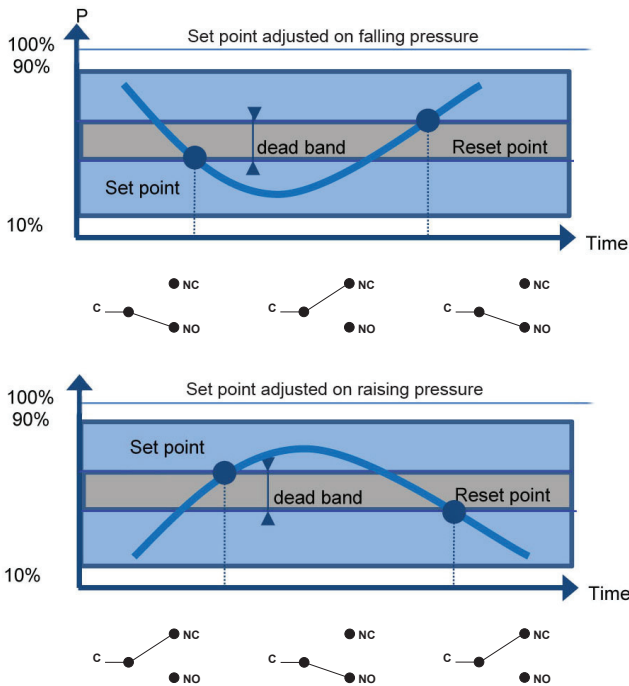
### Technical Data

|                          |  |   |  |
|--------------------------|--|---|--|
| Pressure range           | -200 mbar ... 0 to 60 ... 600 bar                  | Scale   | Internal. Accuracy on reading $\pm 5\%$ F.S.                                   |
| Temperatures             | <u>Pressure range codes 101 to 153</u>             | Cover   | Zamak blue painted<br>Captive stainless steel screws                           |
|                          | Medium: -15 ... +150 °C                            | Case  | Black Zamak  |
|                          | Ambient: -25 ... + 70 °C                           |   |  |
|                          | Storage: -40 ... + 70 °C                           |   |  |
|                          | <u>Pressure range codes 200 to 602</u>             | Mounting  | Wall mounting bracket  |
| Medium: -50 ... +200 °C  | Ground connection                                  | Via internal terminal block   |  |
| Ambient: -25 ... + 55 °C | Electrical connection                              | Terminal block with plastic cable gland for<br>$\varnothing 7$ to 10.5 mm |  |
| Storage: -40 ... + 70 °C |  |   |  |
| Repeatability            | $\pm 1\%$ F.S. / constant pressure cycle           | Electrical function   | See ordering code details on page 5  |
| CE conformity            | Low Voltage Directive LVD 2006/95/EC               | Adjustment  | 2 external adjustment screws on top of the case<br>for set point and dead band |
| Protection rating        | IP 66 (EN 60529)                                   |   |  |
| Process Connection       | Stainless steel 1.4404 (316L)                      |   |  |
| Sensing element          | <u>Pressure range codes 101 to 153</u>             |   |  |
|                          | Flanges: Stainless steel 1.4404 (316L)             |   |  |
|                          | Diaphragm: Viton®                                  |   |  |
|                          | <u>Pressure range codes 200 to 209</u>             |   |  |
|                          | Bellow: Stainless steel 1.4404 or<br>1.4432 (316L) |   |  |
|                          | <u>Pressure range codes 600 to 602</u>             |   |  |
| Piston:                  | Nickel plated steel                                |   |  |

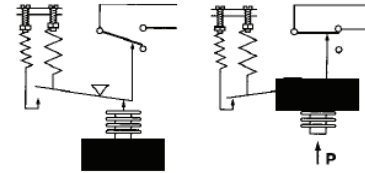
### Options

|  |           |
|--|-----------|
| Customer specific set point adjustment                     | Code SETP |
| Oxygen application   | Code 0765 |
| Mounting on 2" pipe  | Code 0407 |
| Electrical connection: stainless steel connector (Souriau) | Code 2298 |
| Mobile plug for stainless steel connector (Souriau)        | Code 2249 |
| Stainless steel tag plate and wire                         | Code 9941 |
| Lead seal of the adjustment screws                         | Code 8990 |

## Principle



A flexible sensing element actuates a microswitch by means of a lever. The set point is adjusted by means of a compressible spring installed in opposition.



Set point and reset point must be between 10% and 90% of the selected scale.

### Standard factory adjustment

Setpoint at 50% of the scale on falling pressure

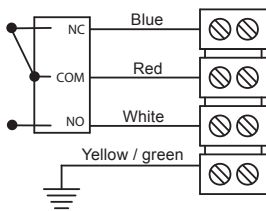
### Customer specific factory adjustment (option SETP)

The following specifications have to be given with the order:

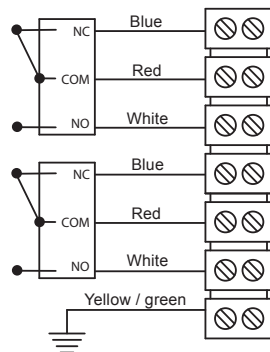
- Setpoint value
- Adjustment on falling or raising pressure
- Dead band value (as needed) when using an adjustable dead band switch

## Electrical connections

### 1 SPDT



### 2 SPDT



**Micro switches characteristics**

| Switch code                                     | A (B)          | M (K)        | C (W)           | E (F)           | H            | D (V)                    | J            |
|---|----------------|--------------|-----------------|-----------------|--------------|--------------------------|--------------|
| Type  | Standard       | Gold contact | Hermetic        | Ultra sensitive | Manual reset | Ultra sensitive Hermetic | Manual reset |
| 6 Vdc   | 0.4 ... 10 A   | 10 ... 50 mA | 5 mA ... 4 A    | 0.4 ... 1 A     | N/A          | 0.4 ... 4 A              | N/A          |
| 12 Vdc  | 0.4 ... 10 A   | 10 ... 50 mA | 5 mA ... 4 A    | 0.4 ... 1 A     | N/A          | 0.4 ... 4 A              | N/A          |
| 24 Vdc  | 0.4 ... 6 A    | 10 ... 50 mA | 5 mA ... 4 A    | 0.4 ... 1 A     | 0.1 ... 8 A  | 0.4 ... 4 A              | N/A          |
| 30 Vdc  | 0.4 ... 6 A    | 10 ... 50 mA | 5 mA ... 3 A    | 0.4 ... 1 A     | 0.1 ... 8 A  | 0.4 ... 2 A              | 0.1 ... 10 A |
| 48 Vdc  | 0.4 ... 6 A    | 10 ... 50 mA | 5 mA ... 3 A    | N/A             | 0.1 ... 8 A  | N/A                      | 0.1 ... 10 A |
| 110 Vdc   | 0.1 ... 0.5 A  | 10 ... 50 mA | 5 mA ... 1 A    | N/A             | N/A          | N/A                      | N/A          |
| 220 Vdc   | 0.1 ... 0.25 A | 10 ... 50 mA | 5 mA ... 0.5 A  | N/A             | N/A          | N/A                      | N/A          |
| 115 Vac   | 0.4 ... 10 A   | 10 ... 50 mA | 50 mA ... 3 A   | 0.4 ... 10 A    | 0.1 ... 10 A | N/A                      | 0.1 ... 10 A |
| 250 Vac   | 0.2 ... 10 A   | 10 ... 50 mA | 50 mA ... 2.5 A | 0.2 ... 10 A    | 0.1 ... 5 A  | N/A                      | 0.1 ... 5 A  |
| Dielectric rigidity between contacts and ground | 2000 V         | 2000 V       | 1500 V          | 2000 V          | 2000 V       | 1000 V                   | 2000 V       |

**Adjustable ranges**

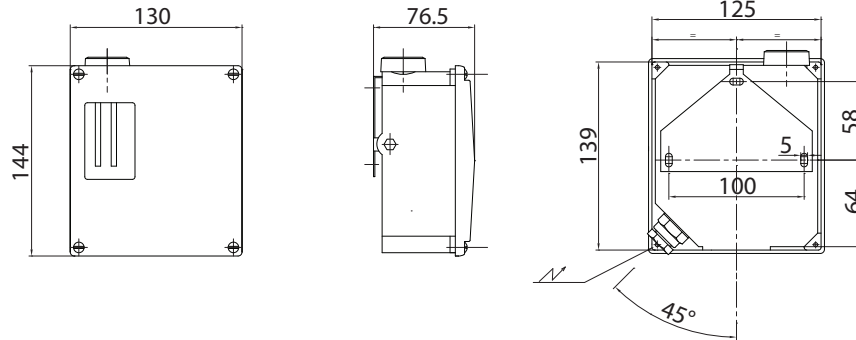
| Scale       | P. Max accidental | Code        | Micro-switch dead band <sup>1)</sup> |             |            |             |                 |       |        |      |     |        |   |
|-------------|-------------------|-------------|--------------------------------------|-------------|------------|-------------|-----------------|-------|--------|------|-----|--------|---|
|             |                   |             | Adjustable dead band                 |             |            |             | Fixed dead band |       |        |      |     |        |   |
|             |                   |             | A (B*)                               |             | M (K*)     |             | C (W*)          |       | E (F*) |      | H   | D (V*) | J |
|             |                   |             | 10%                                  | 90%         | 10%        | 90%         | 10%             | 90%   | 10%    | 90%  | 10% | 90%    |   |
| <b>mbar</b> | <b>bar</b>        |             | <b>mbar</b>                          |             |            |             |                 |       |        |      |     |        |   |
| -50 ... 0   | 0.15              | <b>101</b>  | 2 - 25                               | 2.5 - 25    | 6.5 - 25   | 7.5 - 25    | 0.5             | 0.5   | 2.5    | 3    |     |        |   |
| -2 ... 10   | 0.15              | <b>102</b>  | 1 - 5                                | 1.2 - 5     | 4.5 - 5    | 4.5 - 5     | 0.3             | 0.3   | 1.5    | 1.5  |     |        |   |
| -5 ... 50   | 0.15              | <b>103</b>  | 1.2 - 15                             | 2 - 15      | 5 - 15     | 7 - 15      | 0.4             | 0.4   | 1.5    | 2.5  |     |        |   |
| -8 ... 100  | 0.15              | <b>104</b>  | 1.5 - 25                             | 2 - 25      | 5 - 25     | 10 - 25     | 0.5             | 0.5   | 2      | 2.5  |     |        |   |
| -200 ... 0  | 1                 | <b>151</b>  | 6 - 80                               | 8 - 80      | 15 - 80    | 15 - 80     | 2               | 3     | 7.5    | 10   |     |        |   |
| 0 ... 200   | 1                 | <b>152</b>  | 6 - 80                               | 8 - 80      | 15 - 80    | 15 - 80     | 2               | 3     | 7.5    | 10   |     |        |   |
| 0 ... 400   | 1                 | <b>153</b>  | 15 - 150                             | 20 - 150    | 30 - 150   | 35 - 150    | 4               | 6     | 18     | 25   |     |        |   |
| <b>bar</b>  | <b>bar</b>        | <b>Code</b> | <b>mbar</b>                          |             |            |             |                 |       |        |      |     |        |   |
| -1 ... 0    | 1.5               | <b>200</b>  | 25 - 250                             | 35 - 250    | 80 - 250   | 95 - 250    | 5               | 6     | 30     | 42   |     |        |   |
| -1 ... 2.5  | 7                 | <b>201</b>  | 80 - 1200                            | 100 - 1200  | 150 - 1200 | 200 - 1200  | 22              | 25    | 96     | 120  |     |        |   |
| 0 ... 0.2   | 1.5               | <b>202</b>  | 15 - 100                             | 20 - 100    | 60 - 100   | 65 - 100    | 4               | 5     | 18     | 24   |     |        |   |
| 0.05 ... 1  | 1.5               | <b>203</b>  | 20 - 400                             | 25 - 400    | 80 - 400   | 95 - 400    | 4               | 5     | 24     | 30   |     |        |   |
| 0.5 ... 10  | 30                | <b>204</b>  | 200 - 3000                           | 250 - 3000  | 650 - 3000 | 850 - 3000  | 45              | 50    | 240    | 300  |     |        |   |
| 3.5 ... 25  | 30                | <b>205</b>  | 600 - 5000                           | 1200 - 5000 | 750 - 5000 | 1300 - 5000 | 60              | 100   | 720    | 1440 |     |        |   |
| <b>bar</b>  | <b>bar</b>        | <b>Code</b> | <b>bar</b>                           |             |            |             |                 |       |        |      |     |        |   |
| 5 ... 50    | 65                | <b>206</b>  | 1 - 10                               | 2 - 10      | 2.5 - 10   | 3 - 10      | 0.15            | 0.2   | 1.5    | 2.5  |     |        |   |
| 5 ... 100   | 220               | <b>207</b>  | 2.5 - 15                             | 3 - 15      | 5.5 - 15   | 6.5 - 15    | 0.7             | 0.9   | 3      | 3.5  |     |        |   |
| 20 ... 150  | 220               | <b>208</b>  | 2.5 - 15                             | 3.5 - 15    | 5.5 - 15   | 6.5 - 15    | 0.7             | 1     | 3      | 4.5  |     |        |   |
| -1 ... 3.5  | 30                | <b>209</b>  | 0.15 - 1.5                           | 0.2 - 1.5   | 0.65 - 1.5 | 0.85 - 1.5  | 0.045           | 0.050 | 0.2    | 0.25 |     |        |   |
| 25 ... 175  | 800               | <b>600</b>  | 20 - 80                              | 30 - 80     | 30 - 80    | 35 - 80     | 14              | 14    | 24     | 36   |     |        |   |
| 30 ... 350  | 800               | <b>601</b>  | 20 - 100                             | 30 - 100    | 30 - 100   | 35 - 100    | 16              | 16    | 24     | 36   |     |        |   |
| 60 ... 600  | 800               | <b>602</b>  | 20 - 120                             | 30 - 120    | 30 - 120   | 35 - 120    | 16              | 16    | 24     | 36   |     |        |   |

(\*) For version with 2 microswitches lower values of the dead band must be multiplied x 1.5

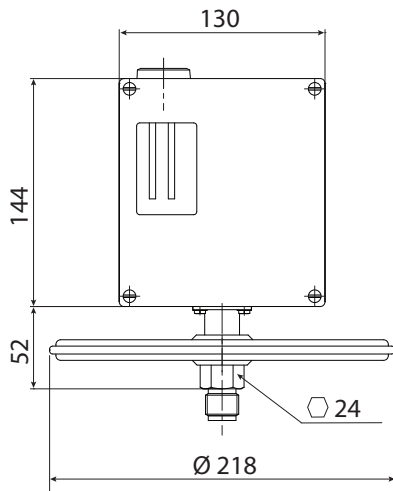
<sup>1)</sup> The value of the dead band is depending on the value of the set point.

This table contains the dead band values for set point adjustment at 10% and 90% of the selected scale. For adjustable dead band the lower value corresponds to the dead band spring totally released and the higher corresponds to the dead band spring fully tensed. For other set points the dead band value can be calculated by linear interpolation between the values at 10% and 90%.

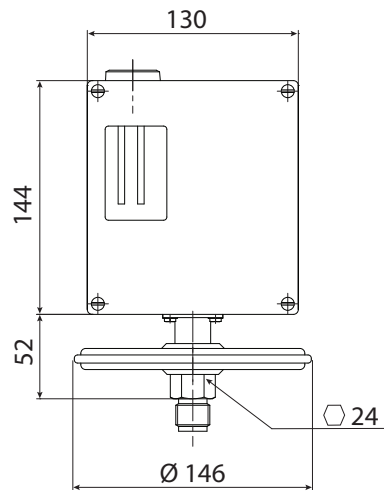
**Dimensions (mm)**



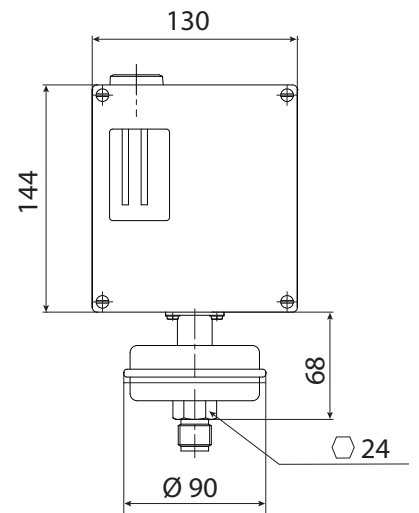
**Pressure range codes: 101 - 102 - 103 - 104**  
Weight: 3 kg



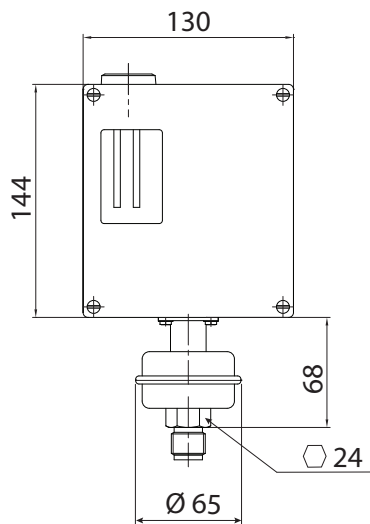
**Pressure range codes: 151 - 152 - 153**  
Weight: 2.8 kg



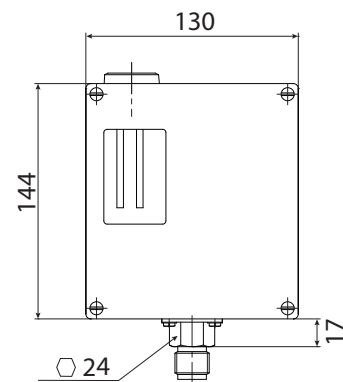
**Pressure range codes: 200 - 202 - 203**  
Weight: 2.5 kg



**Pressure range codes: 201**  
Weight: 2.4 kg



**Pressure range codes: 204 - 205 - 206 - 207  
208 - 209 - 600 - 601 - 602**  
Weight: 2 kg



## Ordering details RPPN

|  | RP | PN | - |  |  |  | . | xxx | / |
|--|----|----|---|--|--|--|---|-----|---|
| <b>Model</b>   |    |    |   |  |  |  |   |     |   |
| Industrial pressure switch   | RP |    |   |  |  |  |   |     |   |
| <b>Approvals</b>   |    |    |   |  |  |  |   |     |   |
| Standard version without ATEX approval   |    | PN |   |  |  |  |   |     |   |
| <b>Sensing element</b>   |    |    |   |  |  |  |   |     |   |
| Diaphragm (Viton®, range 101 to 153)   |    |    |   |  |  |  |   | 3   |   |
| Bellow (stainless steel, range 200 to 209) or Piston (nickel plated steel, range 600 to 602) |    |    |   |  |  |  |   | 7   |   |
| <b>Type of micro switches</b>  |    |    |   |  |  |  |   |     |   |
| <b>Deadband</b>  |    |    |   |  |  |  |   |     |   |
| 1 SPDT standard changeover switch  |    |    |   |  |  |  |   |     | A |
| 2 SPDT standard changeover switch  |    |    |   |  |  |  |   |     | B |
| 1 SPDT hermetically changeover switch  |    |    |   |  |  |  |   |     | C |
| 2 SPDT hermetically changeover switch  |    |    |   |  |  |  |   |     | W |
| 1 SPDT ultra sensitive changeover switch   |    |    |   |  |  |  |   |     | E |
| 2 SPDT ultra sensitive changeover switch   |    |    |   |  |  |  |   |     | F |
| 1 SPDT hermetically, ultra sensitive changeover switch                                       |    |    |   |  |  |  |   |     | D |
| 2 SPDT hermetically, ultra sensitive changeover switch                                       |    |    |   |  |  |  |   |     | V |
| 1 SPDT gold contact changeover switch  |    |    |   |  |  |  |   |     | M |
| 2 SPDT gold contact changeover switch  |    |    |   |  |  |  |   |     | K |
| 1 SPDT changeover switch, manual reset, opening on raising pressure                          |    |    |   |  |  |  |   |     | H |
| 1 SPDT changeover switch, manual reset, opening on falling pressure                          |    |    |   |  |  |  |   |     | J |
| Pneumatic changeover contact, NO   |    |    |   |  |  |  |   |     | Z |
| Pneumatic changeover contact, NC   |    |    |   |  |  |  |   |     | Y |
| <b>Process connection</b>  |    |    |   |  |  |  |   |     |   |
| G 1/2 male (standard)  |    |    |   |  |  |  |   |     | 3 |
| 1/2 NPT male   |    |    |   |  |  |  |   |     | 6 |
| 1/4 NPT female   |    |    |   |  |  |  |   |     | 8 |

| Pressure range (mbar) | Pressure range (kPa) |    |     |
|-----------------------|----------------------|----|-----|
| -50 ... 0             | -5 ... 0             | 1) | 101 |
| -2 ... 10             | -0.2 ... 1           | 1) | 102 |
| -5 ... 50             | -0.5 ... 5           | 1) | 103 |
| -8 ... 100            | -0.8 ... 10          | 1) | 104 |
| -200 ... 0            | -20 ... 0            | 1) | 151 |
| 0 ... 200             | 0 ... 20             | 1) | 152 |
| 0 ... 400             | 0 ... 40             | 1) | 153 |
| Pressure range (bar)  | Pressure range (kPa) |    |     |
| -1 ... 0              | -100 ... 0           | 2) | 200 |
| -1 ... 2.5            | -100 ... 250         | 2) | 201 |
| 0 ... 0.2             | 0 ... 20             | 2) | 202 |
| 0.05 ... 1            | 5 ... 100            | 2) | 203 |
| 0.5 ... 10            | 50 ... 1000          | 2) | 204 |
| 3.5 ... 25            | 350 ... 2500         | 2) | 205 |
| 5 ... 50              | 500 ... 5000         | 2) | 206 |
| 5 ... 100             | 500 ... 10000        | 2) | 207 |
| 20 ... 150            | 2000 ... 15000       | 2) | 208 |
| -1 ... 3.5            | -100 ... 350         | 2) | 209 |
| 25 ... 175            | 2500 ... 17500       | 2) | 600 |
| 30 ... 350            | 3000 ... 35000       | 2) | 601 |
| 60 ... 600            | 6000 ... 60000       | 2) | 602 |

Options to be added behind the / (see example below)

- 1) Only RPPN3
- 2) Only RPPN7

## Ordering example with options

|  | RP | PN | - | 3 | A | 3 | . | 101 | / | 0407 | - | 9941 |
|--|----|----|---|---|---|---|---|-----|---|------|---|------|
| Industrial pressure switch                 | RP | PN | - |   |   |   |   |     |   |      |   |      |
| Without ATEX approval                      |    |    |   | 3 |   |   |   |     |   |      |   |      |
| Diaphragm Viton®                           |    |    |   |   | A |   |   |     |   |      |   |      |
| 1 SPDT standard changeover switch          |    |    |   |   |   | 3 |   |     |   |      |   |      |
| Process connection G 1/2 male              |    |    |   |   |   |   | . |     |   |      |   |      |
| Pressure range -50 ... 0 mbar              |    |    |   |   |   |   |   | 101 |   |      |   |      |
| Option: Mounting on 2" pipe                |    |    |   |   |   |   |   |     | / | 0407 |   |      |
| Option: Stainless steel tag plate and wire |    |    |   |   |   |   |   |     |   |      | - | 9941 |