

**BOURDON**  
The Original by Baumer



## Main Features

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

## Applications

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

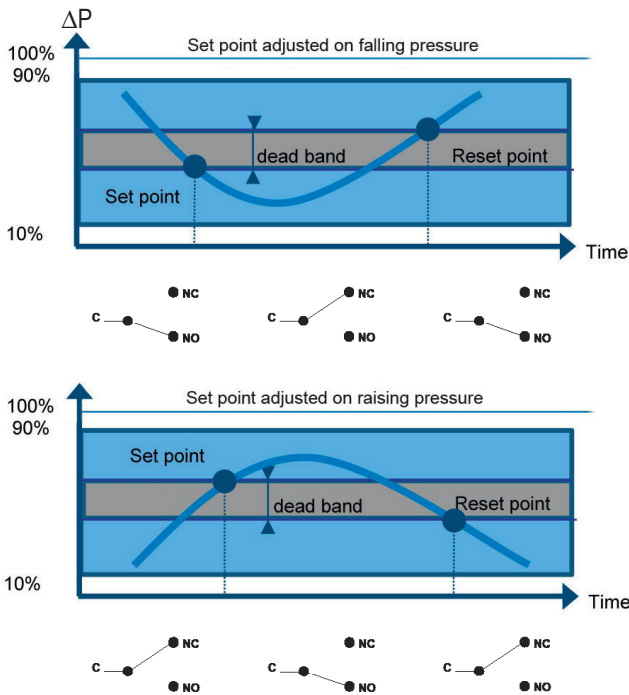
## Technical Data

Pressure range	-2.5 ... 2.5 mbar to 2.5 ... 30 bar	Cover	Zamak blue painted Captive stainless steel screws
Temperature	<u>Pressure range codes 110 to 157</u> Medium: -15 ... +150 °C Ambient: -25 ... + 55 °C Storage: -40 ... + 70 °C <u>Pressure range codes 211 to 258</u> Medium: -50 ... +200 °C Ambient: -25 ... + 55 °C Storage: -40 ... + 70 °C	Case	Black Zamak
Repeatability	± 1% F.S. / constant pressure cycle	Mounting	Wall mounting bracket
CE conformity	Low Voltage Directive 2014/35/EU	Ground connection	Via internal terminal block
Protection rating	IP 66 (EN 60529)	Electrical connection	Terminal block with plastic cable gland : - cable Ø 7 to 10.5 mm
Process Connection	Stainless steel 1.4404 (316L)	Electrical function	See ordering code details in page 5
Sensing element	<u>Pressure range codes 110 to 157</u> Flanges: Stainless steel 1.4404 (316L) Diaphragm: Viton® <u>Pressure range codes 211 to 258</u> Bellow: Stainless steel 1.4404 or 1.4432 (316L)	Adjustment	2 external adjustment screws for set point and dead band. When set point adjustment is required it is necessary to know the static pressure, as it has an influence on the set point.
Scale	Internal. Accuracy on reading ± 5% F.S.		

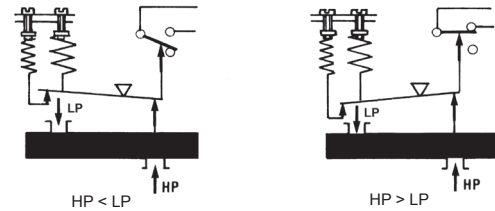
## Options

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

### Principle



A flexible sensing element actuates a microswitch by means of a piston. 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

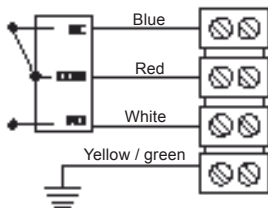
#### Customer specific factory adjustment (option SETP)

The following specifications have to be given with the order:

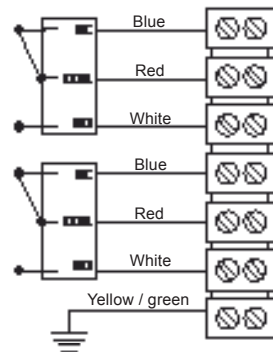
- Setpoint value
- Adjustment on falling or raising pressure.
- Static pressure
- Dead band value (as needed) when using an adjustable dead band switch

### 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	0.1... 8 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... 8 A
48 Vdc	0.4... 6 A	10... 50 mA	5 mA ... 3 A	N/A	N/A	N/A	N/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	N/A	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

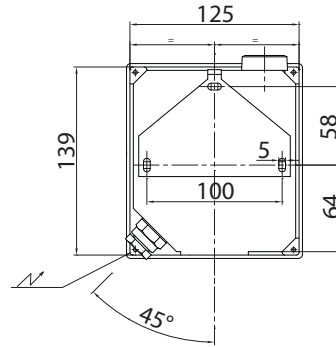
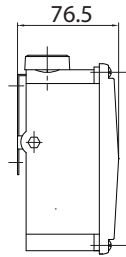
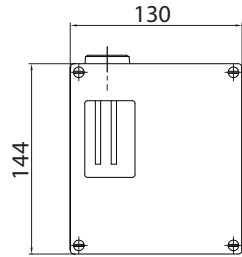
Scale	Max ΔP	Max P Static	Code	Micro-switch dead band <sup>(1)</sup>										
				Adjustable dead band				Fixed dead band						
				A (B*)		M (K*)		C(W*)		E(F*)		H	D (V*)	J
				10%	90%	10%	90%	10%	90%	10%	90%	10%	90%	
mbar	mbar	bar		mbar										
-2.5... 2.5	5	0.15	<b>110</b>	N/A	N/A	N/A	N/A	0.3	0.4	N/A	N/A			
2 ... 10	10	0.15	<b>111</b>	1.2 - 10	1.6 - 10	4.5 - 10	4.5 - 10	0.3	0.4	1.5	2			
2 ... 50	50	0.15	<b>121</b>	1.7 - 30	2.2 - 30	5 - 30	5.5 - 30	0.4	0.5	2	3			
2 ... 100	100	0.15	<b>131</b>	1.7 - 40	2.5 - 40	5.5 - 40	10 - 40	0.5	0.7	2	3			
10 ... 200	200	1	<b>156</b>	8 - 80	10.5 - 80	25 - 80	40 - 80	2.5	3.4	10	13			
10 ... 400	400	1	<b>157</b>	15 - 150	20 - 150	30 - 150	45 - 150	4.5	6	18	24			
bar			Code	bar				mbar		bar				
0.05... 0.5	0.5	7	<b>211</b>	0.09 - 0.3	0.1 - 0.3	0.15 - 0.4	0.2 - 0.4	25	30	0.11	0.12			
0.05... 1	1	7	<b>221</b>	0.09 - 0.3	0.1 - 0.3	0.15 - 0.4	0.22 - 0.4	25	30	0.11	0.12			
0.15... 0.5	0.5	20	<b>214</b>	0.14 - 0.5	0.18 - 0.5	N/A	N/A	55	60	0.17	0.22			
0.15... 1	1	20	<b>224</b>	0.2 - 0.6	0.25 - 0.6	N/A	N/A	55	60	0.17	0.24			
0.15... 4	4	20	<b>234</b>	0.21 - 1.5	0.27 - 1.5	0.65 - 2	0.8 - 2	55	65	0.17	0.3			
0.8... 4	4	30	<b>235</b>	0.7 - 2.5	1.1 - 2.5	0.75 - 2.5	1.1 - 2.5	70	100	0.84	1.35			
0.8... 10	10	30	<b>245</b>	0.7 - 2.5	1.1 - 2.5	0.75 - 2.5	1.1 - 2.5	70	100	0.84	1.35			
1.5... 10	10	65	<b>246</b>	1.2 - 5	2.5 - 5	2.5 - 6	3.5 - 6	180	240	1.45	3			
1.5... 20	20	65	<b>256</b>	1.2 - 5	2.5 - 5	2.5 - 6	3.5 - 6	180	240	1.45	3			
2.5... 20	20	220	<b>257</b>	2.5 - 20	3.5 - 20	6 - 20	7 - 20	800	1000	3	4.2			
2.5... 30	30	220	<b>258</b>	3 - 30	4 - 20	6 - 20	7 - 20	850	1000	3.5	4.8			

(\*) 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.

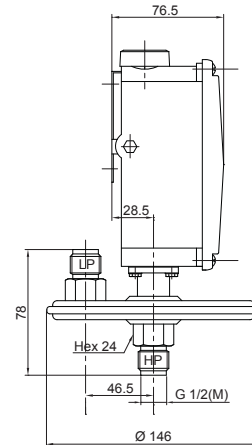
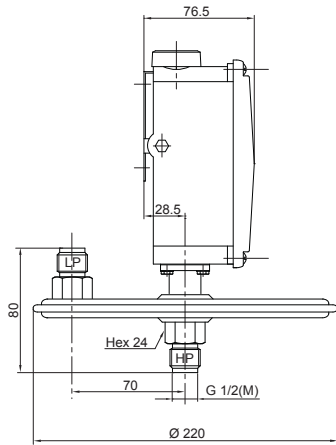
This table contains the dead band values for set point adjustment at 10% and 90% of the selected scale. For adjustable dead band the lower value corresponds to the dead band spring totally released and the higher corresponds to the dead band spring fully tensed. For other set points the dead band value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

**Dimensions (mm)**



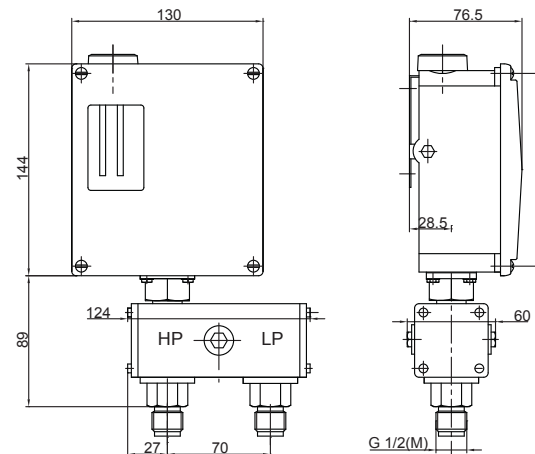
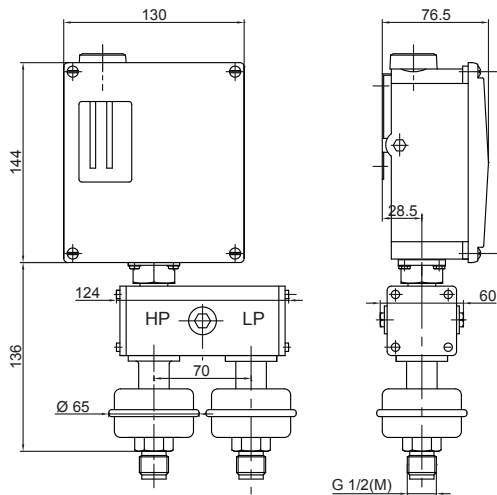
**Pressure range codes: 110 - 111 - 121 - 131**  
Weight: 3 kg

**Pressure range codes: 156 - 157**  
Weight: 2.8 kg



**Pressure range codes: 211 - 221**  
Weight: 3 kg

**Pressure range codes: 214 - 224 - 234 - 235 - 245 - 246 - 256 - 257 - 258**  
Weight: 3 kg



## Ordering details RDN4 - RDN8

RD	N	-				.	xxx	/
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### Model

Differential pressure switch

RD

### Approvals

Standard version without ATEX approval

N

### Sensing element

Diaphragm (Viton®, range 110 to 157)

4

Bellow (stainless steel, range 211 to 258)

8

### Type of micro switches

### Deadband

1 SPDT standard changeover switch	Adjustable	A
2 SPDT standard changeover switch	Adjustable	B
1 SPDT hermetically changeover switch	Adjustable	C
2 SPDT hermetically changeover switch	Adjustable	W
1 SPDT ultra sensitive changeover switch	Fix	E
2 SPDT ultra sensitive changeover switch	Fix	F
1 SPDT hermetically, ultra sensitive changeover switch	Fix	D
2 SPDT hermetically, ultra sensitive changeover switch	Fix	V
1 SPDT gold contact changeover switch	Adjustable	M
2 SPDT gold contact changeover switch	Adjustable	K
1 SPDT changeover switch, manual reset, opening on raising pressure	Fix	H
1 SPDT changeover switch, manual reset, opening on falling pressure	Fix	J
Pneumatic changeover contact, NO		Z
Pneumatic changeover contact, NC		Y

### Process connection

G 1/2 male (standard)

3

1/2 NPT male

6

1/4 NPT female

8

### Pressure range (mbar)

-2.5 ... 2.5

2 ... 10

2 ... 50

2 ... 100

10 ... 200

10 ... 400

### Pressure range (kPa)

-0.25 ... 0.25

0.2 ... 1

0.2 ... 5

0.2 ... 10

1 ... 20

1 ... 40

110

111

121

131

156

157

### Pressure range (bar)

0.05 ... 0.5

0.05 ... 1

0.15 ... 0.5

0.15 ... 1

0.15 ... 4

0.8 ... 4

0.8 ... 10

1.5 ... 10

1.5 ... 20

2.5 ... 20

2.5 ... 30

### Pressure range (kPa)

5 ... 50

5 ... 100

15 ... 50

15 ... 100

15 ... 400

80 ... 400

80 ... 1000

150 ... 1000

150 ... 2000

250 ... 2000

250 ... 3000

211

221

214

224

234

235

245

246

256

257

258

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

## Ordering example with options

RD	N	-	4	C	3	.	111	/	0407	-	9941
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Differential pressure switch

With ATEX approval

Diaphragm Viton®

1 SPDT hermetically changeover switch

Process connection G 1/2 male

Pressure range 2 ... 10 mbar (0.2 ... 1 kPa)

Option: Mounting on 2" pipe

Option: Stainless steel tag plate and wire