

BOURDON
The Original by Baumer



Main Features

- Excellent repeatability
- Dead band adjustment for regulation
- Fix dead band for control and alarm
- High static pressure up to 80 bar
- Intrinsic safety Hazardous area 0, 1, 2

Applications

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

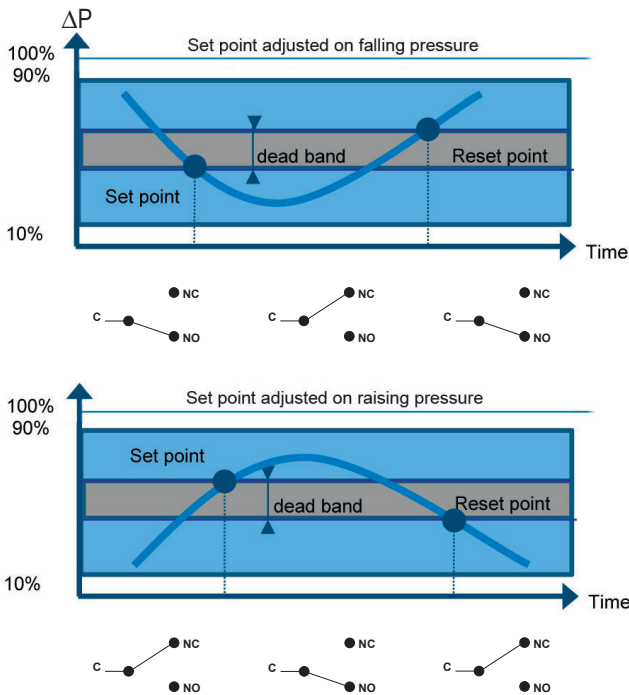
Technical Data

Pressure range	2 ... 10 mbar to 10 ... 2000 mbar	Electrical connection	Terminal block with plastic cable gland for Ø 7 to 10.5 mm
Temperature	Process: -15 ... +150 °C Ambient: -25 ... + 55 °C Storage: -40 ... + 70 °C	Electrical function	See ordering code details on page 5
Repeatability	± 1% F.S. / constant pressure cycle	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.
CE conformity	Low Voltage Directive 2014/35/EU ATEX Directive 2014/34/EU	ATEX/IECEx	<u>Certificate</u> LCIE 03 ATEX 6123X IECEX LCIE 15.0060X <u>Classification</u> CE Ex I M 1 Ex ia I Ma Ex II 1 G Ex ia IIC T6 or T5 Ga
Protection rating	IP 66 (EN 60529)	<u>Electrical data</u>	$U_{max} = 28 \text{ Vdc}$ $I_{max} = 120 \text{ mA}$ $P_{max} = 0.84 \text{ W}$ $C_i = \text{Negligible}$; $L_i = \text{Negligible}$
Process connection	Stainless steel 1.4404 (316L)		
Sensing element	<u>Pressure range codes 111 to 131</u> Flanges: Stainless steel 1.4404 (316L) Diaphragm: Nitrile Butyl rubber <u>Pressure range codes 156 to 163</u> Flanges: Stainless steel 1.4404 (316L) Diaphragm: Viton®		
Scale	Internal. Accuracy on reading ± 5% F.S.		
Cover	Zamak blue painted Captive stainless steel screws		
Case	Black Zamak		
Mounting	Wall mounting bracket		
Ground connection	Via internal terminal block		

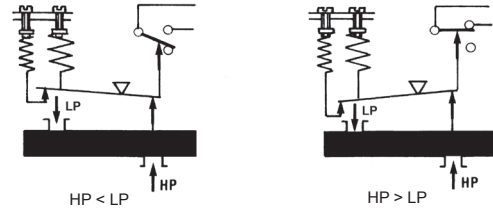
Options

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 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

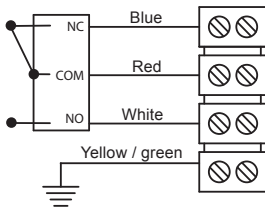
Customer specific factory adjustment (option SETP)

The following specifications have to be given with the order:

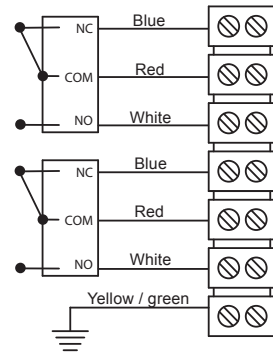
- Setpoint value
- Adjustment on falling or raising pressure.
- Static pressure
- Dead band value (as needed) when using an adjustable dead band switch

Electrical connections

1 SPDT



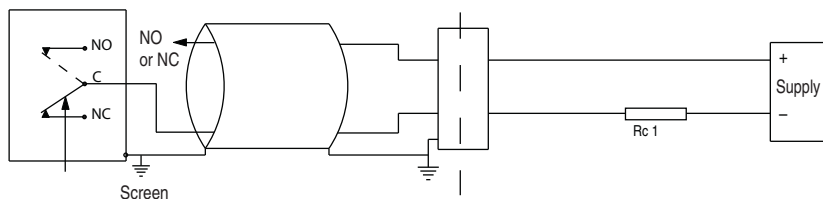
2 SPDT



Hazardous area
Zone 0, 1, 2

Certified safety
barrier

Non hazardous
area



For max. ambient temperature refer to technical data on page 1.

The installation must be made in an intrinsically safe circuit whose certified electrical safety parameters do not exceed any of the values U_{max} , I_{max} and P_{max} given in the electrical data on page 1.

All necessary measures must be taken by the user, to avoid the calorific transfer from the fluid to the apparatus head increasing the head's temperature to such that it reaches the self-ignition temperature of the gas in which it is used.

Micro switches characteristics

Switch code	M (K)	C (W)	S
Type	Gold contact	Hermetic	Ultrasensitive Gold contact
6 Vdc	10 ... 50 mA	5 ... 120 mA	10 ... 50 mA
12 Vdc	10 ... 50 mA	5 ... 120 mA	10 ... 50 mA
24 Vdc	10 ... 50 mA	5 ... 120 mA	10 ... 50 mA
30 Vdc	N/A	N/A	N/A
48 Vdc	N/A	N/A	N/A
110 Vdc	N/A	N/A	N/A
220 Vdc	N/A	N/A	N/A
115 Vac	N/A	N/A	N/A
250 Vac	N/A	N/A	N/A
Dielectric rigidity between contacts and ground	2000 V	1500 V	2000 V

Adjustable ranges

Scale	Max ΔP	Max P Static	Code	Micro-switch dead band ⁽¹⁾					
				Adjustable dead band				Fixed dead band	
				M (K*)		C(W*)		S	
				10%	90%	10%	90%	10%	90%
mbar	mbar	bar		mbar					
2 ... 10	10	0 ... 5	111	1.2 - 10	1.6 - 10	4.5 - 10	4.5 - 10	0.7	1.2
2 ... 20	50	0 ... 5	112	1.7 - 20	2.2 - 20	5 - 20	5.5 - 20	0.9	1.4
2 ... 50	50	0 ... 5	121	1.7 - 30	2.2 - 30	5 - 30	5.5 - 30	0.9	1.4
2 ... 100	100	0 ... 5	131	1.7 - 40	2.5 - 40	5.5 - 40	10 - 40	1.2	2
10 ... 200	200	5.5 ... 50	156	8 - 80	10.5 - 80	35 - 80	45 - 80	5.8	9.5
10 ... 400	400	5.5 ... 50	157	15 - 150	20 - 150	40 - 150	50 - 150	10.5	17
10 ... 1000	1000	5.5 ... 50	158	18 - 150	22 - 150	45 - 150	60 - 150	11.5	19.6
10 ... 700	700	5.5 ... 80	161**	20 - 200	30 - 200	60 - 350	90 - 350	18.5	22.5
10 ... 1500	1500	5.5 ... 80	162**	20 - 300	30 - 300	60 - 350	100 - 350	18.5	22.5
10 ... 2000	2000	5.5 ... 80	163**	30 - 300	60 - 300	90 - 350	200 - 350	20.7	33.6

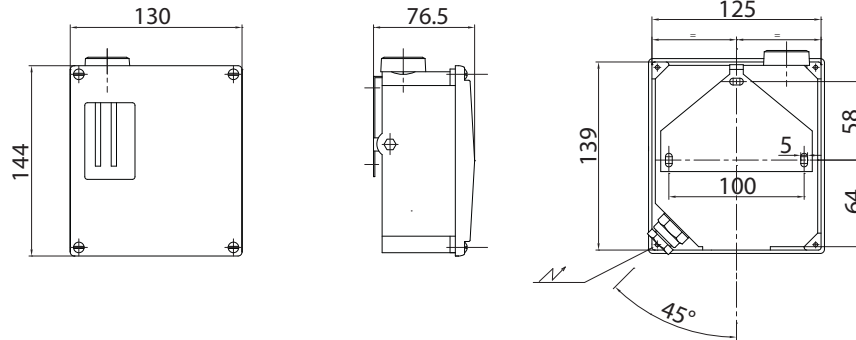
(*) For version with 2 microswitches lower values of the dead band must be multiplied x 1.5

(**) G1/4 female only

⁽¹⁾ The value of the dead band is depending on the value of the set point.

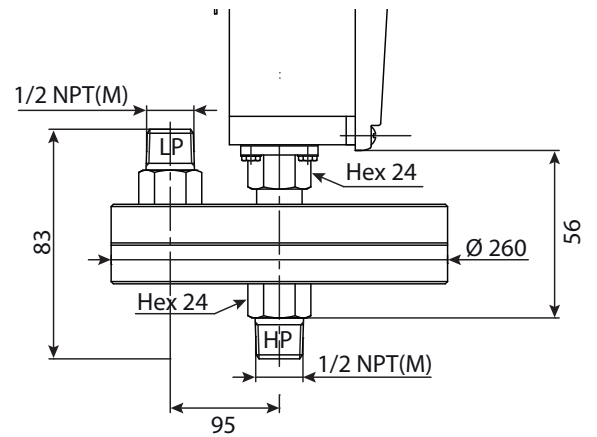
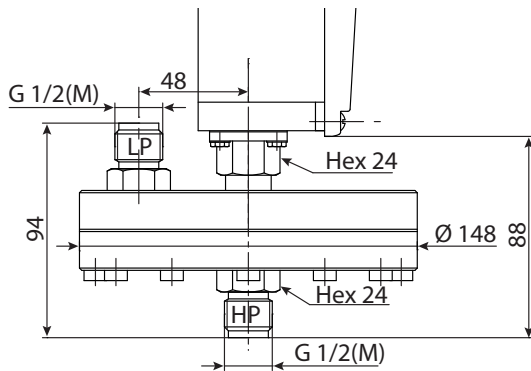
This table contains the dead band values for set point adjustment at 10% and 90% of the selected scale. For adjustable dead band the lower value corresponds to the dead band spring totally released and the higher corresponds to the dead band spring fully tensed. For other set points the dead band value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

Dimensions (mm)

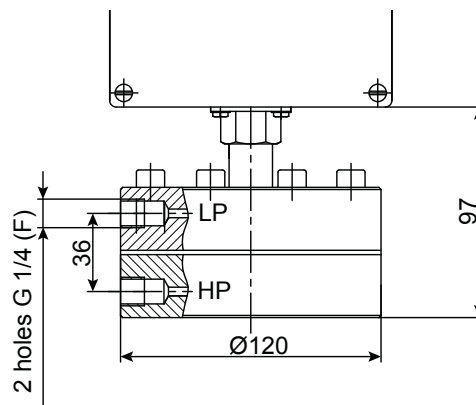


Pressure range codes: 111 - 121 - 131
Weight: 10 kg

Pressure range codes: 156 - 157 - 158
Weight: 6.4 kg



Pressure range codes: 161-162-163
Weight: 7 kg



Ordering details RDY5

RD	Y	-	5		.	xxx	/
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Model

Differential pressure switch

RD

Approvals

ATEX/IECEX intrinsic safety

Y

Sensing element

Diaphragm (Nitrile Butyl rubber, ranges 111 to 131, Viton®, ranges 156 to 163)

5

Type of micro switches

1 SPDT hermetically changeover switch
2 SPDT hermetically changeover switch
1 SPDT gold contact changeover switch
2 SPDT gold contact changeover switch
1 SPDT ultrasensitive gold contact changeover switch

Deadband

Adjustable C
Adjustable W
Adjustable M
Adjustable K
Fix S

Process connection

G 1/4 female (only pressure ranges 161, 162, 163)
G 1/2 male (standard)
1/2 NPT male
1/4 NPT female

H
3
6
8

Pressure range (mbar)

2 ... 10
2 ... 20
2 ... 50
2 ... 100
10 ... 200
10 ... 400
10 ... 1000
10 ... 700
10 ... 1500
10 ... 2000

Pressure range (kPa)

0.2 ... 1
0.2 ... 2
0.2 ... 5
0.2 ... 10
1 ... 20
1 ... 40
1 ... 100
1 ... 70
1 ... 150
1 ... 200

111
112
121
131
156
157
158
Process connection G1/4 female 161
Process connection G1/4 female 162
Process connection G1/4 female 163

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

Ordering example with options

RD	Y	-	5	C	3	.	111	/	0407	-	9941
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- Differential pressure switch
- With ATEX/IECEX approval intrinsic safety
- Sensing element diaphragm
- 1 SPDT hermetically changeover switch
- Process connection G 1/2 male
- Pressure range 2 ... 10 mbar
- Option: Mounting on 2" pipe
- Option: Stainless steel tag plate and wire