

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



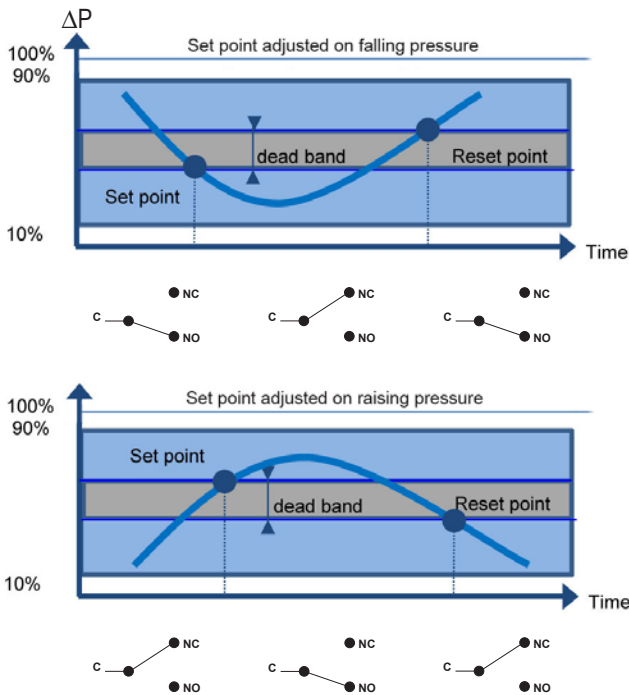
Technical Data

Pressure range	-2.5 ... 2.5 mbar to 2.5 ... 30 bar	Scale	Internal. Accuracy on reading $\pm 5\%$ F.S.
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	Cover	Zamak blue painted Captive stainless steel screws
Repeatability	$\pm 1\%$ F.S. @ constant pressure cycle	Case	Black Zamak
CE conformity	Low Voltage Directive LVD 2006/95/EC Pressure Equipment Directive PED 97/23/EC	Mounting	Wall mounting bracket
Protection rating	IP 66 (EN 60529)	Ground connection	Via internal terminal block
Process Connection	Stainless steel 1.4404 (316L)	Electrical connection	Terminal block with plastic cable gland : - cable \varnothing 7 to 10.5 mm
Sensing element	<u>Pressure range codes 110 to 157</u> Flanges : Stainless steel 1.4404 (316L) Diaphragm : Viton® <u>Pressure range codes 211 to 256</u> Bellow : Stainless steel 1.4404 or 1.4432 (316L) <u>Pressure range codes 257 and 258</u> Piston : Nickel plated steel	Electrical function	See ordering code details in page 5
		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.

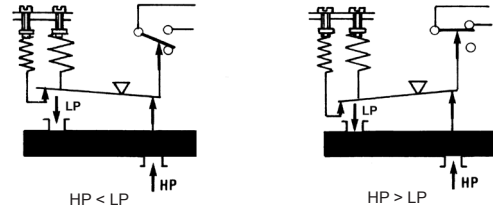
Options

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

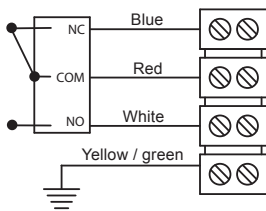
Customer specific factory adjustment (option SETP)

The following specifications have to be given with the order:

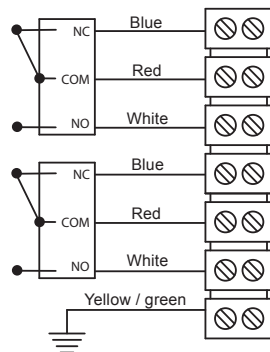
- Setpoint value
- Adjustment on falling or raising pressure.
- Static pressure
- Dead band value when using an adjustable dead band switch

Electrical connections

1 SPDT



2 SPDT



Micro switches characteristics

Switch code	N (T)	A (B)	M (K)	C (W)	E (F)	H	D (V)	J
Type	Tropicalized	Standard	Gold contact	Hermetic	Ultra sensitive	Manual reset	Ultra sensitive Hermetic	Manual reset
6 Vdc	0.1... 8 A	0.4... 15 A	10... 50 mA	5 mA ... 4 A	0.4... 1 A	N/A	0.4... 4 A	N/A
12 Vdc	0.1... 8 A	0.4... 15 A	10... 50 mA	5 mA ... 4 A	0.4... 1 A	N/A	0.4... 4 A	N/A
24 Vdc	0.1... 8 A	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	0.1... 8 A	0.4... 6 A	10... 10 mA	5 mA ... 3 A	0.4... 1 A	0.1... 8 A	0.4... 2 A	0.1... 8 A
48 Vdc	0.1... 8 A	0.4... 6 A	10... 50 mA	5 mA ... 3 A	N/A	0.1... 8 A	N/A	0.1... 8 A
110 Vdc	N/A	0.1... 0.5 A	10... 50 mA	5 mA ... 1 A	N/A	N/A	N/A	N/A
220 Vdc	N/A	0.1... 0.25 A	10... 50 mA	5 mA ... 0.5 A	N/A	N/A	N/A	N/A
115 Vac	0.1... 10 A	0.4... 15 A	10... 50 mA	50 mA ... 3 A	0.4... 10 A	0.1... 10 A	N/A	0.1... 10 A
250 Vac	0.1... 5 A	0.2... 15 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	2000 V	1500 V	2000 V	2000 V	1000 V	2000 V

Adjustable ranges

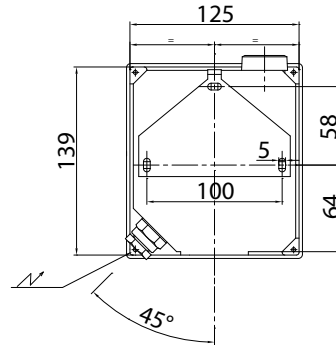
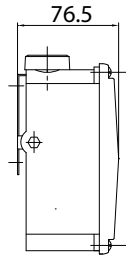
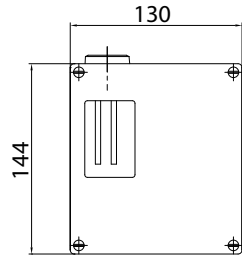
Scale	Max ΔP	Max P Static	Code	Micro-switch dead band ¹⁾									
				Adjustable dead band				Fixed dead band					
				N (T*)	A (B*)	M (K*)	C(W*)		E(F*)		H	D (V*)	J
				10%	90%	10%	90%	10%	90%	10%	90%		
mbar	mbar	bar		mbar									
-2.5... 2.5	5	0.15	110	N/A	N/A	N/A	N/A	0.3	0.4	N/A	N/A		
2 ... 10	10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

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

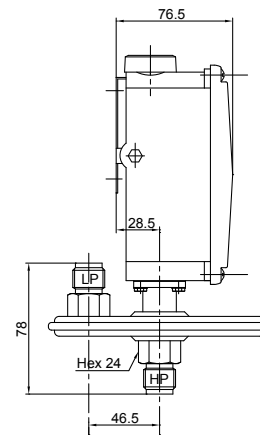
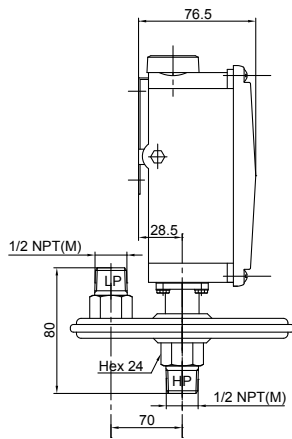
This table contains the dead band values for set point adjustment at 10% and 90% of the selected scale. For adjustable dead band the lower value corresponds to the dead band spring totally released and the higher corresponds to the dead band spring fully tensed. For other set points the dead band value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

Dimensions (mm)



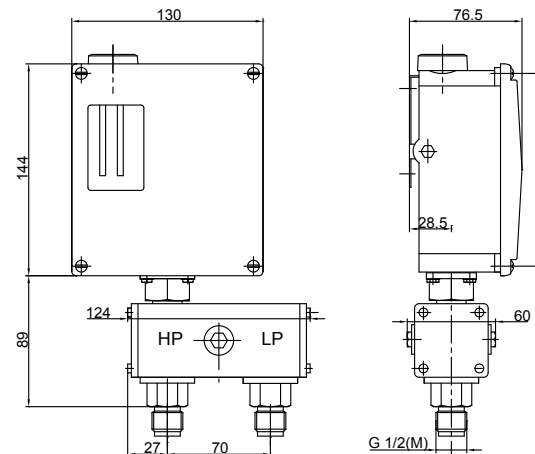
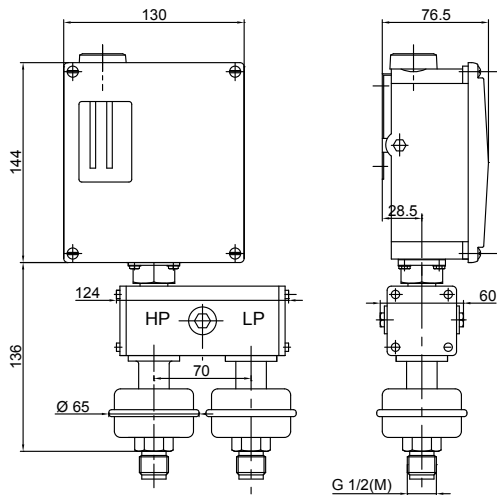
Pressure range codes : 110 - 111 - 121 - 131
Weight : 3 kg

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 RDPN

RD	PN	-	A	.	xxx	/
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Model

Differential pressure switch

RP

Approvals

Standard version without ATEX approval

PN

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 tropicalized changeover switch	Adjustable	N
2 SPDT tropicalized changeover switch	Adjustable	T
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

Type

Standard

A

Process connection

G 1/2 male (standard)
1/2 NPT male
1/4 NPT female

3
6
8

Pressure range (mbar)

Pressure range (kPa)

-2.5 ... 2.5	-0.25 ... 0.25	110
2 ... 10	0.2 ... 1	111
2 ... 50	0.2 ... 5	121
2 ... 100	0.2 ... 10	131
10 ... 200	1 ... 20	156
10 ... 400	1 ... 40	157

Pressure range (bar)

Pressure range (kPa)

0.05 ... 0.5	5 ... 50	211
0.050 ... 1	5 ... 100	221
0.15 ... 0.5	15 ... 50	214
0.15 ... 1	15 ... 100	224
0.15 ... 4	15 ... 400	234
0.8 ... 4	80 ... 400	235
0.8 ... 10	80 ... 1000	245
1.5 ... 10	150 ... 1000	246
1.5 ... 20	150 ... 2000	256
2.5 ... 20	250 ... 2000	257
2.5 ... 30	250 ... 3000	258

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

Ordering details RDPN

RD	PN	-	A	A	3	.	111	/	0407	-	9941
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Differential pressure switch

Without ATEX approval

1 SPDT standard changeover switch

Standard type

Process connection G 1/2 male

Pressure range 2 ... 10 mbar

Option : Mounting on 2" pipe

Option : Stainless steel tag plate and wire