

BOURDON
The Original by Baumer



Main Features

- Excellent repeatability
- Dead band adjustment for regulation
- Fix dead band for control and alarm
- Static pressure max. 20 bar
- No influence of the static pressure on the setpoint

Applications

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

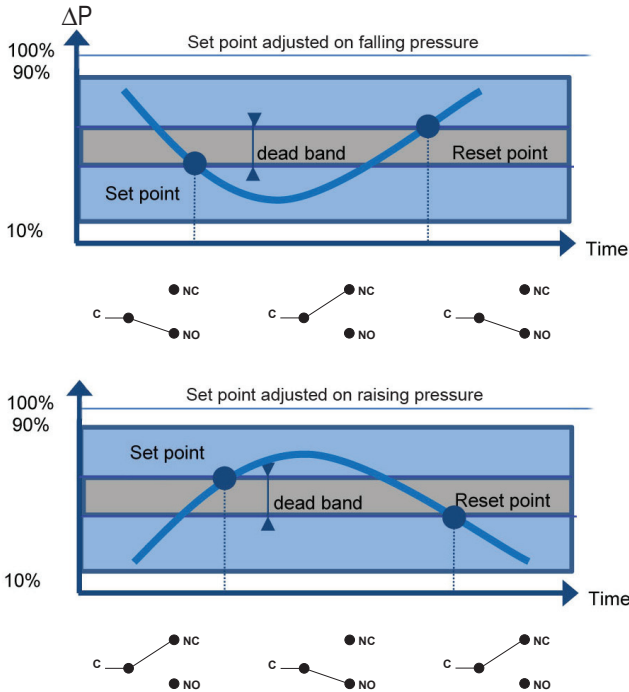
Technical Data

Pressure range	10 ... 200 mbar to 0 ... 2000 mbar	Electrical connection	Terminal block with plastic cable gland : - cable 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 in page 5
Repeatability	± 1% F.S. / constant pressure cycle	Adjustment	2 external adjustment screws on top of the case for set point and dead band. The adjustment is not influenced by changes of the static pressure.
CE conformity	Low Voltage Directive LVD 2006/95/EC		
Protection rating	IP 66 (EN 60529)		
Process Connection	Stainless steel 1.4404 (316L)		
Sensing element	Flanges: Stainless steel 1.4404 (316L) Diaphragm: Viton®		
Scale	Internal. Accuracy on reading ± 5% F.S.		
Housing	Zamak blue painted Captive stainless steel screws		
Case	Zamak black		
Mounting	Wall mounting bracket		
Ground connection	Via internal terminal block		

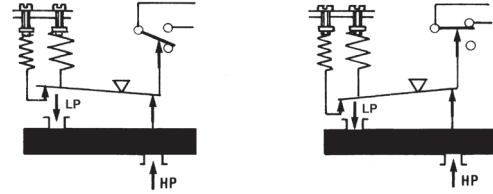
Options

Customer specific set point adjustment	Code SETP
Oxygen application	Code 0765
Mounting on 2" pipe	Code 0407
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 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

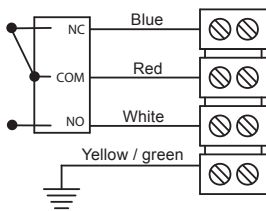
Customer specific factory adjustment (option SETP)

The following specifications have to be given with the order:

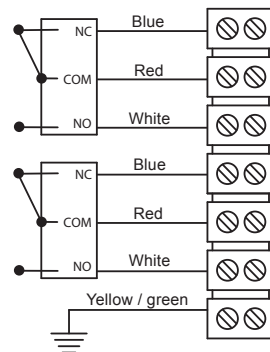
- Setpoint value
- Adjustment on falling or raising pressure
- Dead band value (as needed) when using an adjustable dead band switch

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	0.1... 8 A
30 Vdc	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	0.4... 6 A	10... 50 mA	5 mA ... 3 A	N/A	0.1... 8 A	N/A	0.1... 8 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	Max ΔP	Max P Static	Code	Micro-switch dead band ⁽¹⁾									
				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%		
mbar	mbar	bar		mbar									
10 ... 200	200	20	156	8 - 80	10.5 - 80	35 - 80	45 - 80	2.5	3.4	10	13		
10 ... 400	400	20	157	15 - 150	20 - 150	40 - 150	50 - 150	4.5	6	18	24		
10 ... 1000	1000	20	158	18 - 150	22 - 150	45 - 150	60 - 150	5	7	22	26.5		
10 ... 700	700	20	161**	30 - 250	45 - 250	130 - 450	150 - 450	13	15	36	54		
10 ... 1500	1500	20	162**	30 - 300	45 - 300	130 - 450	150 - 450	13	15	36	54		
10 ... 2000	2000	20	163**	45 - 300	90 - 300	180 - 450	300 - 450	18	25	54	108		

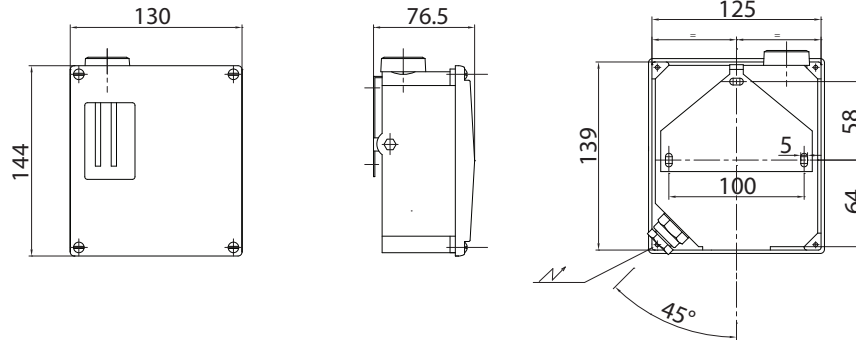
(*) For version with 2 microswitches lower values of the dead band must be multiplied x 1.5

(**) G1/4 female only

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

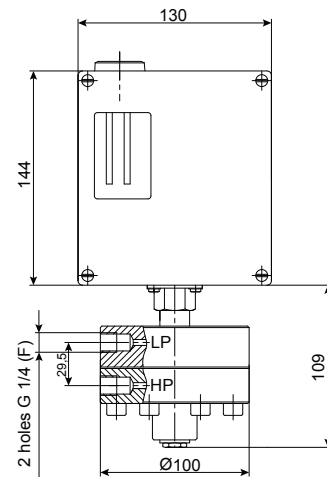
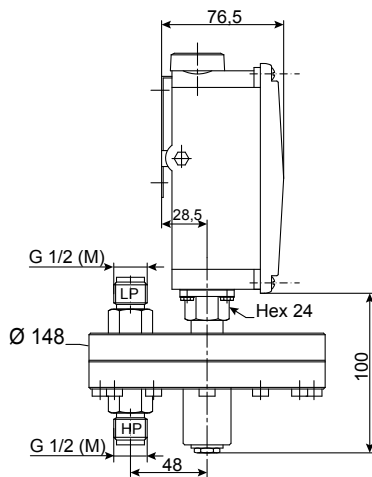
This table contains the dead band values for set point adjustment at 10% and 90% of the selected scale. For adjustable dead band the lower value corresponds to the dead band spring totally released and the higher corresponds to the dead band spring fully tensed. For other set points the dead band value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

Dimensions (mm)



Pressure range codes: 156-157-158
Weight: 6.6 kg

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



Ordering details RDN6

RD N - 6 . xxx /

Model

Differential pressure switch for variable static pressure

RD

Approvals

Standard version without ATEX approval

N

Sensing element

Diaphragm (Viton®)

6

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 1/4 female (only pressure ranges 161, 162, 163)

H

G 1/2 male (standard)

3

1/2 NPT male

6

1/4 NPT female

8

Pressure range (mbar)

Pressure range (kPa)

10 ... 200	1 ... 20	156
10 ... 400	1 ... 40	157
10 ... 1000	1 ... 100	158
10 ... 700	1 ... 70	161
10 ... 1500	1 ... 150	162
10 ... 2000	1 ... 200	163

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

Ordering example with options

RD N - 6 C 3 . 156 / 0407 _ 9941

Differential pressure switch for variable static pressure

Without ATEX approval

Sensing element diaphragm

1 SPDT hermetically changeover switch

Process connection G 1/2 male

Pressure range 10 ... 200 mbar

Option: Mounting on 2" pipe

Option: Stainless steel tag plate and wire