



**BOURDON**  
The Original by Baumer



### Main Features

- Excellent repeatability
- Dead band adjustment for regulation
- Fix dead band for control and alarm
- High static pressure
- Explosion proof Hazardous areas 1, 2, 21, 22

### Applications

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

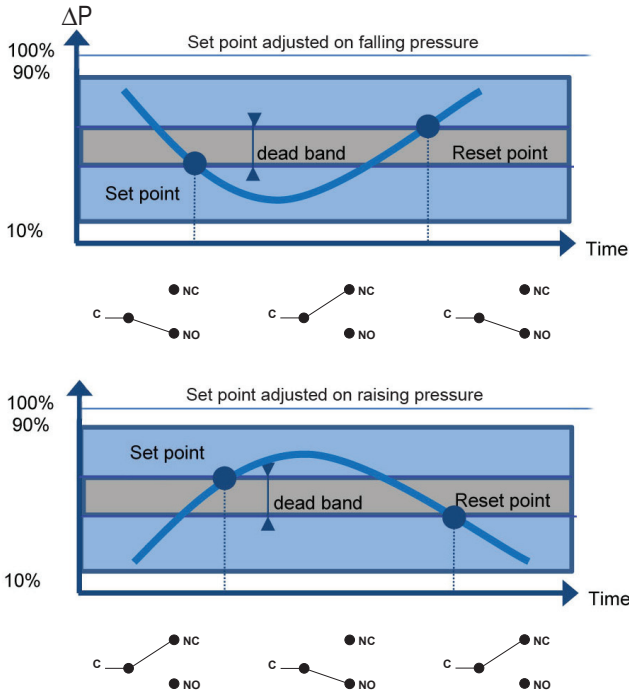
### Technical Data

Pressure range	2 ... 10 mbar to 10 ... 2000 mbar	Ground connection	Via internal terminal block
Temperature	Process : -15 ... +150 °C Ambient : -20 ... + 55 °C Storage : -40 ... + 70 °C	Electrical connection	Terminal block with metallic cable gland for Ø 7 to 12 mm standard
Repeatability	± 1% F.S. / constant pressure cycle	Electrical function	See ordering code details on page 5
CE conformity	Low Voltage Directive LVD 2006/95/EC ATEX Directive 94/9/EC	Adjustment	2 external adjustment screws for set point and deadband. When set point adjustment is required it is necessary to know the static pressure, as it has an influence on the set point.
Protection rating	IP 66 (EN 60529)	ATEX	<u>Type examination certificate</u> LCIE 03 ATEX 6231X (Type RA80) EN 60079-0: 2012 (internal conformity analysis) EN 60079-1: 2007 EN 60079-31: 2009 <u>Marking</u> CE 0081 Ex II 2 G D Ex d IIC T6 or T5 Gb Ex t IIIC IIC T80 °C or T95 °C Db IP6X <u>T° ambient</u> -20 °C to +60 °C (T6 or T80 °C) or -20 °C to +70 °C (T5 or T95 °C)
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.		
Housing	Type RA80, explosion proof, flameproof Aluminium epoxy painted. Captive stainless steel screws		
Mounting	3 back lugs for wall mounting		

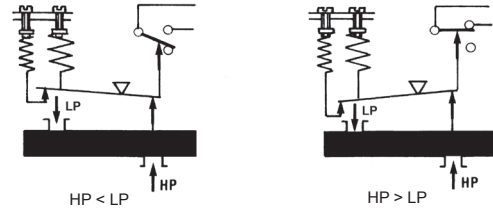
### Options

Customer specific set point adjustment	Code SETP
Oxygen application	Code 0765
Lead seal of the adjustment screws	Code 8990
Mounting on 2" pipe	Code 0407
Stainless steel tag plate and wire	Code 9941

## 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

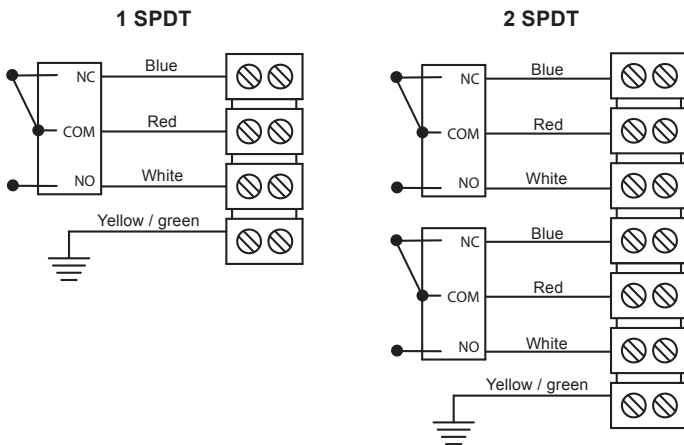
Setpoint at 50% of the scale on falling pressure

### 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



### Hazardous areas: 1, 2, 21, 22

-20 °C ≤ Ta ≤ +70 °C	Dust IP6x	Gases
	T° surface	Class
Ta = 60 °C	80 °C	T6
Ta = 70 °C	95 °C	T5

**Important** : Maximum power dissipation in the case must not exceed 5 W

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	A (B)	M (K)	C (W)	E (F)	D (V)
Type	Standard	Gold contact	Hermetic	Ultra sensitive	Ultra sensitive Hermetic
6 Vdc	0.4... 10 A	10... 50 mA	5 mA ... 4 A	0.4... 1 A	0.4... 4 A
12 Vdc	0.4... 10 A	10... 50 mA	5 mA ... 4 A	0.4... 1 A	0.4... 4 A
24 Vdc	0.4... 6 A	10... 50 mA	5 mA ... 4 A	0.4... 1 A	0.4... 4 A
30 Vdc	0.4... 6 A	10... 10 mA	5 mA ... 3 A	0.4... 1 A	0.4... 2 A
48 Vdc	0.4... 6 A	10... 50 mA	5 mA ... 3 A	N/A	N/A
110 Vdc	0.1... 0.5 A	10... 50 mA	5 mA ... 1 A	N/A	N/A
220 Vdc	0.1... 0.25 A	10... 50 mA	5 mA ... 0.5 A	N/A	N/A
115 Vac	0.4... 10 A	10... 50 mA	50 mA ... 3 A	0.4... 10 A	N/A
250 Vac	0.2... 10 A	10... 10 mA	50 mA ... 2.5 A	0.2 ... 10 A	N/A
Dielectric rigidity between contacts and ground	2000 V	2000 V	1500 V	2000 V	1000 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*)		D (V*)	
				10%	90%	10%	90%	10%	90%	10%	90%		
mbar	mbar	bar		mbar									
2 ... 10	10	0 ... 5	<b>111</b>	1.8 - 15	2.4 - 15	6.7 - 15	6.7 - 15	0.45	0.6	2.25	3		
2 ... 20	50	0 ... 5	<b>112</b>	2.6 - 30	3.3 - 30	7.5 - 30	8 - 30	0.6	0.75	3	4.5		
2 ... 50	50	0 ... 5	<b>121</b>	2.6 - 40	3.3 - 40	7.5 - 40	8 - 40	0.6	0.75	3	4.5		
2 ... 100	100	0 ... 5	<b>131</b>	2.6 - 60	3.7 - 60	8.2 - 60	15 - 60	0.75	1.05	3	4.5		
10 ... 200	200	5.5 ... 50	<b>156</b>	12 - 120	15.5 - 120	52 - 120	67 - 120	3.75	5.1	15	19.5		
10 ... 400	400	5.5 ... 50	<b>157</b>	22 - 225	30 - 225	60 - 225	75 - 225	6.75	9	27	36		
10 ... 1000	1000	5.5 ... 50	<b>158</b>	27 - 225	33 - 225	67 - 225	90 - 225	7.5	10.5	33	40		
10 ... 700	700	5.5 ... 80	<b>161**</b>	30 - 300	45 - 300	90 - 525	135 - 525	9	12	36	54		
10 ... 1500	1500	5.5 ... 80	<b>162**</b>	30 - 450	45 - 450	90 - 525	150 - 525	9	12	36	54		
10 ... 2000	2000	5.5 ... 80	<b>163**</b>	40 - 450	90 - 450	135 - 525	300 - 525	13	18	54	108		

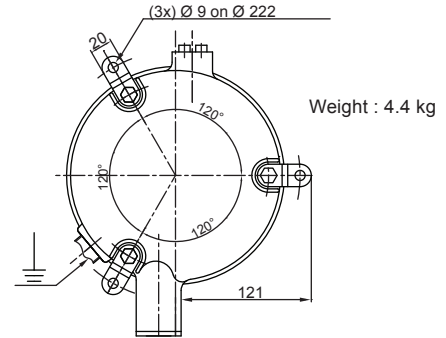
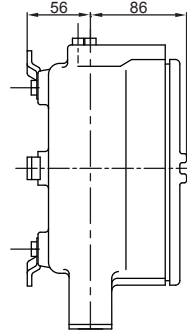
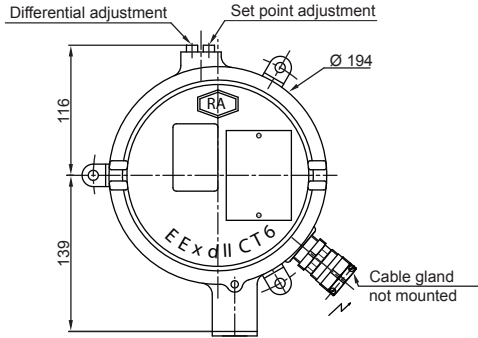
(\*) For version with 2 microswitches lower values of the dead band must be multiplied x 1.5

(\*\*) G 1/4 female only

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

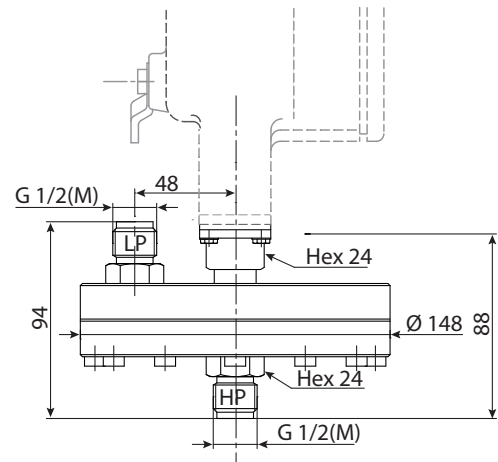
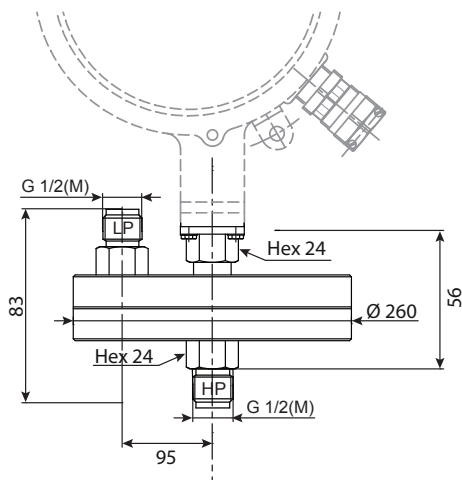
This table contains the dead band values for set point adjustment at 10% and 90% of the selected scale. For adjustable dead band the lower value corresponds to the dead band spring totally released and the higher corresponds to the dead band spring fully tensed. For other set points the dead band value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

**Dimensions (mm)**

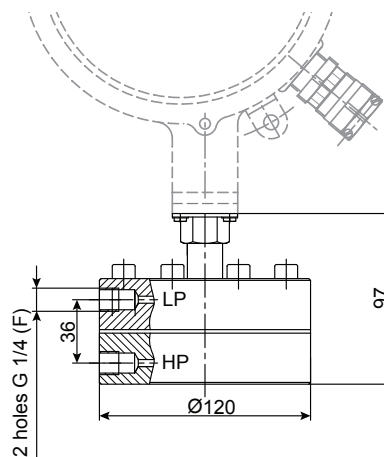


**Pressure range codes: 111 - 112 - 121 - 131**  
Weight: 8.8 kg

**Pressure range codes: 156 - 157 - 158**  
Weight: 4.7 kg



**Pressure range codes: 161-162-163**  
Weight: 5.4 kg



## Ordering details RDE5

	RD	E	-	5		.	xxx	/
<b>Model</b>								
Differential pressure switch	RD							
<b>Approvals</b>								
Explosion proof		E						
<b>Sensing element</b>								
Diaphragm (Nitrile Butyl rubber, ranges 111 to 131, Viton®, ranges 156 to 163)				5				
<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	
<b>Process connection</b>								
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)	
2 ... 10	0.2 ... 1	111
2 ... 20	0.2 ... 2	112
2 ... 50	0.2 ... 5	121
2 ... 100	0.2 ... 10	131
10 ... 200	1 ... 20	156
10 ... 400	1 ... 40	157
10 ... 1000	1 ... 100	158
10 ... 700	1 ... 70	161 Process connection G1/4 female
10 ... 1500	1 ... 150	162 Process connection G1/4 female
10 ... 2000	1 ... 200	163 Process connection G1/4 female

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

## Ordering example with options

