



**BOURDON**  
The Original by Baumer

## Main Features

- Excellent repeatability
- Dead band adjustment for regulation
- Fix dead band for control and alarm
- Overpressure up to 100 bar
- Explosion proof Hazardous areas 1, 2, 21, 22

## Applications

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



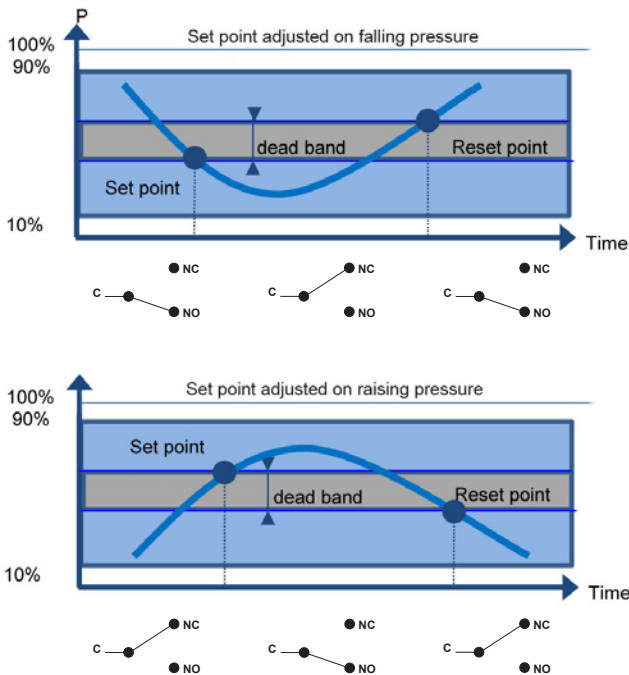
## Technical Data

Pressure range	-50 ... 0 mbar to 0 ... 2500 mbar	Electrical connection	Terminal block with metallic cable gland for Ø 7 to 12 mm standard
Temperature	Process : -15 ... +150°C Ambient : -20 ... +70°C (T5) -20 ... +60°C (T6) 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 deadband
CE conformity	Low Voltage Directive LVD 2006/95/EC Pressure Equipment Directive PED 97/23/EC ATEX Directive 94/9/EC	ATEX	<u>Type examination certificate</u> LCIE 03 ATEX 6231X EN 60079-0 : 2009 EN 60079-1 : 2007 EN 60079-31 : 2009
Protection rating	IP 66 (EN 60529)	<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
Process Connection	Stainless steel 1.4404 (316L)	<u>T° ambient</u>	-20°C to +60°C (T6 or T80°C) or -20°C to +70°C (T5 or T95°C)
Sensing element	Flanges : Stainless steel 1.4404 (316L) Diaphragm : Viton®		
Scale	Internal. Accuracy on reading ± 5% FS		
Explosion proof housing	Aluminium epoxy painted Captive stainless steel screws		
Mounting	3 back lugs for wall mounting		
Ground connection	Via internal terminal block		

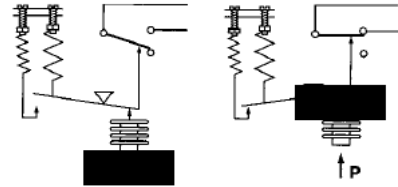
## Options

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 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

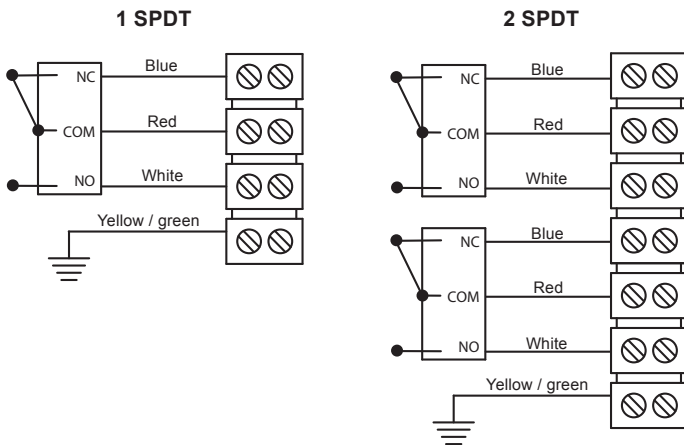
Setpoint at 50% of the scale on falling pressure

### Customer specific factory adjustment (option SETP)

The following specifications have to be given with the order:

- Setpoint value
- Adjustment on falling or raising pressure
- Deadband value 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	N (T)	A (B)	M (K)	C (W)	E (F)	D (V)
Type	Tropicalized	Standard	Gold contact	Hermetic	Ultra sensitive	Ultra sensitive Hermetic
6 Vdc	0.1 ... 8 A	0.4 ... 15 A	10 ... 50 mA	5 mA ... 4 A	0.4 ... 1 A	0.4 ... 4 A
12 Vdc	0.1 ... 8 A	0.4 ... 15 A	10 ... 50 mA	5 mA ... 4 A	0.4 ... 1 A	0.4 ... 4 A
24 Vdc	0.1 ... 8 A	0.4 ... 6 A	10 ... 50 mA	5 mA ... 4 A	0.4 ... 1 A	0.4 ... 4 A
30 Vdc	0.1 ... 8 A	0.4 ... 6 A	10 ... 10 mA	5 mA ... 3 A	0.4 ... 1 A	0.4 ... 2 A
48 Vdc	0.1 ... 8 A	0.4 ... 6 A	10 ... 50 mA	5 mA ... 3 A	N/A	N/A
110 Vdc	N/A	0.1 ... 0.5 A	10 ... 50 mA	5 mA ... 1 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
115 Vac	0.1 ... 10 A	0.4 ... 15 A	10 ... 50 mA	50 mA ... 3 A	0.4 ... 10 A	N/A
250 Vac	0.1 ... 5 A	0.2 ... 15 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	2000 V	1500 V	2000 V	1000 V

## Adjustable ranges

Scale	P. Max accidental	Code	Micro-switch deadband <sup>1)</sup>								
			Adjustable deadband				Fixed deadband				
			N (T*)	A (B*)	M (K*)	C (W*)		E (F*)		D (V*)	
mbar	bar		10%	90%	10%	90%	10%	90%	10%	90%	
			mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
-50 ... 0	10	<b>101</b>	3 - 37	3.8 - 37	9.8 - 37	11.3 - 37	0.9	0.9	3.8	4.5	
-2 ... 10	10	<b>102</b>	1.5 - 10	1.5 - 10	6.8 - 10	6.8 - 10	0.6	0.6	2.3	2.3	
-5 ... 50	10	<b>103</b>	1.5 - 30	3 - 30	6.8 - 30	7.5 - 30	0.6	0.6	2.3	3.8	
-8 ... 100	10	<b>104</b>	2.3 - 37	3.8 - 37	7.5 - 37	15 - 37	0.75	0.75	3	4.5	
-200 ... 0	50	<b>151</b>	18 - 120	30 - 120	37 - 120	60 - 120	4.5	6	21.8	37	
0 ... 200	50	<b>152</b>	23 - 120	37 - 120	45 - 120	67 - 120	5.3	6	27	45	
0 ... 400	50	<b>153</b>	26 - 220	45 - 220	53 - 220	75 - 220	6	8.3	31	53	
0 ... 1000	50	<b>154</b>	33 - 220	53 - 220	67 - 220	90 - 220	9	10.5	40	67	
0 ... 700	100	<b>171**</b>	30 - 525	60 - 525	60 - 525	105 - 525	10.5	13.5	36	75	
0 ... 1500	100	<b>172**</b>	30 - 525	90 - 525	60 - 525	150 - 525	10.5	13.5	36	112	
0 ... 2500	100	<b>173**</b>	37 - 525	135 - 525	75 - 525	240 - 525	13.5	16.5	45	165	

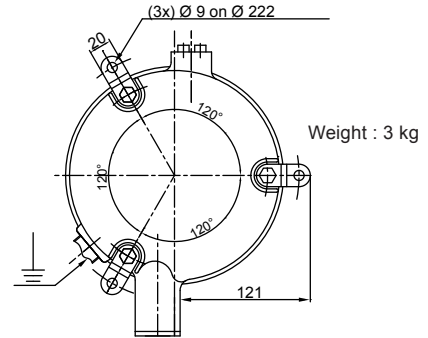
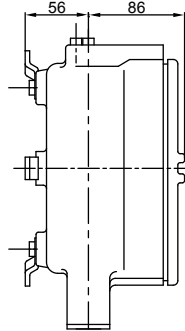
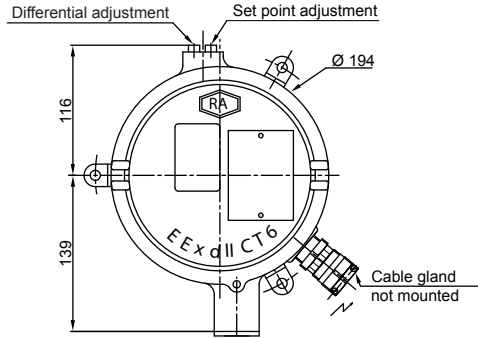
(\*) When using 2 microswitches deadband lower values should be x1.5

(\*\*) G1/4 female only

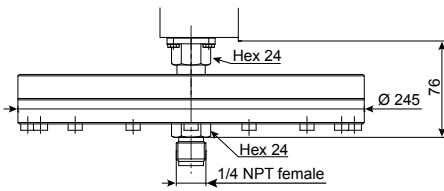
<sup>1)</sup> The value of the deadband is depending on the value of the set point.

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

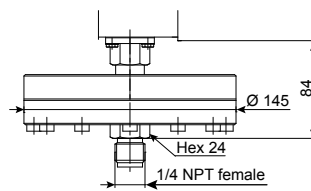
**Dimensions (mm)**



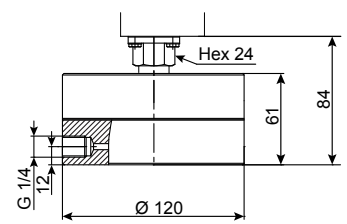
Pressure range code : 101 - 102 - 103 - 104  
Weight : 10 kg



Pressure range code : 151 - 152 - 153 - 154  
Weight : 6.4 kg



Pressure range code : 171 - 172 - 173  
Weight : 7 kg



## Ordering details RPPE4

	RP	PE	-	4	.	xxx	/
<b>Model</b>							
Industrial pressure switch	RP						
<b>Approvals</b>							
Explosion proof		PE					
<b>Sensing element</b>							
Diaphragm (Viton®), high overpressure resistance				4			
<b>Type of micro switches</b>							
							<b>Deadband</b>
1 SPDT standard changeover switch							Adjustable
2 SPDT standard changeover switch							Adjustable
1 SPDT hermetically changeover switch							Adjustable
2 SPDT hermetically changeover switch							Adjustable
1 SPDT ultra sensitive changeover switch							Fix
2 SPDT ultra sensitive changeover switch							Fix
1 SPDT hermetically, ultra sensitive changeover switch							Fix
2 SPDT hermetically, ultra sensitive changeover switch							Fix
1 SPDT gold contact changeover switch							Adjustable
2 SPDT gold contact changeover switch							Adjustable
1 SPDT tropicalized changeover switch							Adjustable
2 SPDT tropicalized changeover switch							Adjustable
<b>Process connection</b>							
G 1/4 female (only pressure ranges 171, 172, 173)							H
G 1/2 male (standard)							3
1/2 NPT male							6
1/4 NPT female							8
<b>Pressure range (mbar)</b>							
<b>Pressure range (kPa)</b>							
-50 ... 0							101
-2 ... 10							102
-5 ... 50							103
-8 ... 100							104
-200 ... 0							151
0 ... 200							152
0 ... 400							153
0 ... 1000							154
0 ... 700							Process connection G 1/4 female
0 ... 1500							171
0 ... 2500							Process connection G 1/4 female
							172
							Process connection G 1/4 female
							173

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

## Ordering example with options

	RP	PE	-	4	A	3	.	101	/	0407	-	9941
Industrial pressure switch	RP											
Explosion proof		PE										
Diaphragm Viton®				4								
1 SPDT standard changeover switch					A							
Process connection G 1/2 male						3						
Pressure range -50 ... 0 mbar							.	101				
Option : Mounting on 2" pipe									/	0407		
Option : Stainless steel tag plate and wire											-	9941