

Main Features

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

Applications

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

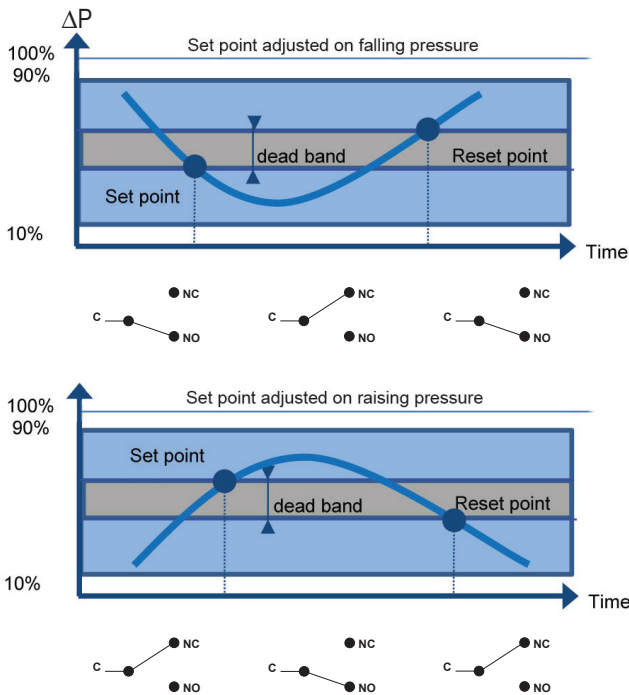
Technical Data

Pressure range	-2.5 ... 2.5 mbar to 2.5 ... 30 bar	Mounting	3 back lugs for wall mounting
Temperature	<u>Pressure range codes 110 to 157</u> Medium: -15 ... + 150 °C Ambient: -20 ... + 55 °C Storage: -40 ... + 70 °C <u>Pressure range codes 211 to 258</u> Medium: -50 ... + 200 °C Ambient: -20 ... + 55 °C Storage: -40 ... + 70 °C	Ground connection	Via internal terminal block
Repeatability	± 1% F.S. / constant pressure cycle	Electrical connection	Terminal block with metallic cable gland for Ø 7 to 12 mm standard
CE conformity	Low Voltage Directive LVD 2006/95/EC ATEX Directive 94/9/EC	Electrical function	See ordering code details on page 5
Protection rating	IP 66 (EN 60529)	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.
Process Connection	Stainless steel 1.4404 (316L)	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
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	<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	
Scale	Internal. Accuracy on reading ± 5% F.S.	<u>T° ambient</u> -20 °C to +60 °C (T6 or T80 °C) or -20 °C to +70 °C (T5 or T95 °C)	
Housing	Type RA80, explosion proof, flameproof Aluminium epoxy painted. Captive stainless steel screws		

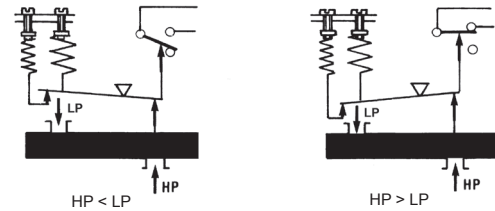
Options

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

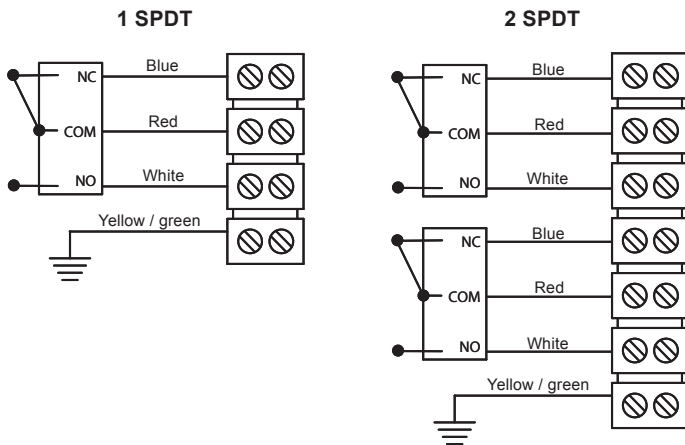
Setpoint at 50% of the scale on falling pressure

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

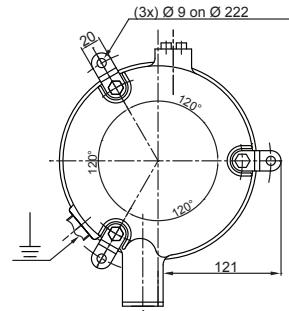
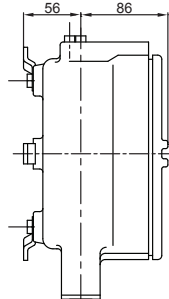
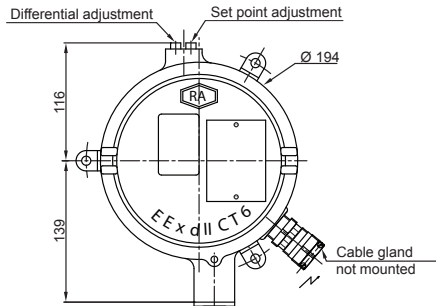
Scale	Max ΔP	Max P Static	Code	Micro-switch dead band ⁽¹⁾									
				Adjustable dead band				Fixed dead band					
				A (B*)		M (K*)		C(W*)		E(F*)		D (V*)	
				10%	90%	10%	90%	10%	90%	10%	90%		
mbar	mbar	bar		mbar									
-2.5 ... 2.5	5	0.15	110	N/A	N/A	N/A	N/A	0.45	0.6	N/A	N/A		
2 ... 10	10	0.15	111	1.8 - 15	2.4 - 15	6.7 - 15	6.7 - 15	0.45	0.6	2.25	3		
2 ... 50	50	0.15	121	2.6 - 45	3.3 - 45	7.5 - 45	7.5 - 45	0.6	0.75	3	4.5		
2 ... 100	100	0.15	131	2.6 - 60	3.7 - 60	8.2 - 60	15 - 60	0.75	1.05	3	4.5		
10 ... 200	200	1	156	12 - 120	15.5 - 120	37 - 120	60 - 120	3.75	5.1	15	19.5		
10 ... 400	400	1	157	22 - 225	30 - 225	45 - 225	67 - 225	6.75	9	27	36		
bar			Code	bar				mbar		bar			
0.05... 0.5	0.5	7	211	0.13 - 0.45	0.15 - 0.45	0.22 - 0.6	0.3 - 0.6	37.5	45	0.17	0.18		
0.05... 1	1	7	221	0.13 - 0.45	0.15 - 0.45	0.22 - 0.75	0.33 - 0.75	37.5	45	0.17	0.18		
0.15... 0.5	0.5	30	214	0.22 - 0.75	0.27 - 0.75	N/A	N/A	82.5	90	0.26	0.33		
0.15... 1	1	30	224	0.22 - 0.9	0.3 - 0.9	N/A	N/A	82.5	90	0.26	0.36		
0.15... 4	4	30	234	0.22 - 2.2	0.37 - 2.2	0.97 - 3	1.2 - 3	82.5	97.5	0.26	0.4		
0.8... 4	4	30	235	1 - 3.7	1.6 - 3.7	1.12 - 3.7	1.6 - 3.7	105	150	1.26	2.03		
0.8... 10	10	30	245	1 - 3.7	1.6 - 3.7	1.12 - 3.7	1.6 - 3.7	105	150	1.26	2.03		
1.5... 10	10	65	246	1.8 - 7.5	3.7 - 7.5	3.7 - 9	5.2 - 9	270	360	2.18	4.5		
1.5... 20	20	65	256	1.8 - 7.5	3.7 - 7.5	3.7 - 9	5.2 - 9	270	360	2.18	4.5		
2.5... 20	20	220	257	3.7 - 20	5.2 - 20	9 - 20	10 - 20	1200	1500	4.5	6.3		
2.5... 30	30	220	258	4.5 - 30	6 - 30	9 - 30	10 - 30	1275	1500	5.4	7.2		

(*) 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.

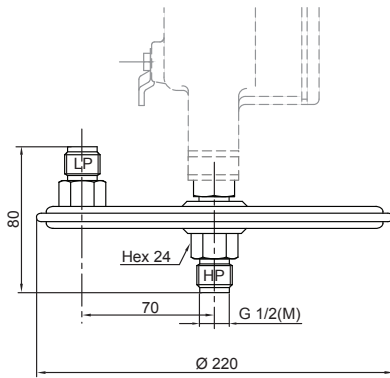
This table contains the dead band values for set point adjustment at 10% and 90% of the selected scale. For adjustable dead band the lower value corresponds to the dead band spring totally released and the higher corresponds to the dead band spring fully tensed. For other set points the dead band value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

Dimensions (mm)

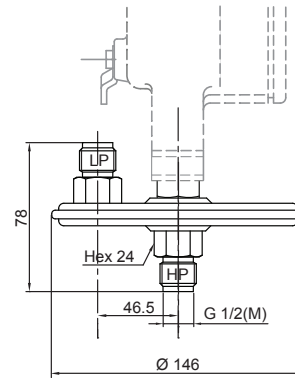


Weight: 4.4 kg

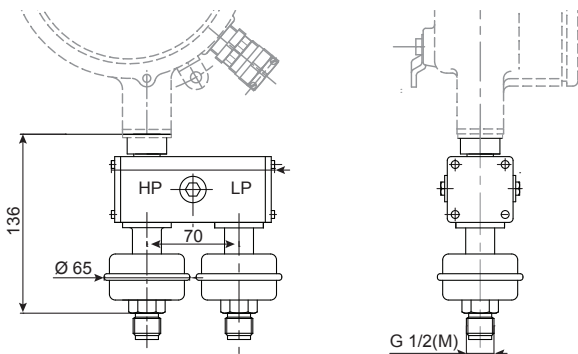
Pressure range codes: 110 - 111 - 121 - 131
Weight: 1.8 kg



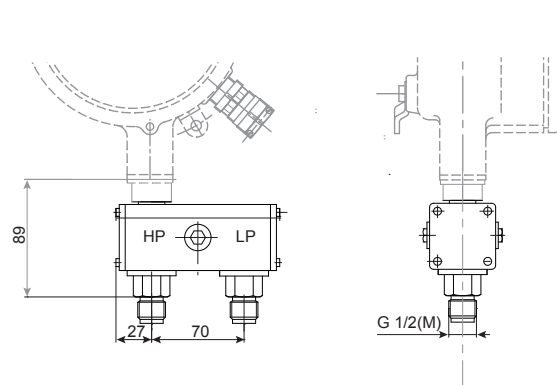
Pressure range codes: 156 - 157
Weight: 1 kg



Pressure range codes: 211 - 221
Weight: 1.6 kg



Pressure range codes: 214 - 224 - 234 - 235 - 245 - 246 - 256 - 257 - 258
Weight: 1.2 kg



Ordering details RDE4 - RDE8

	RD	E	-			.	xxx	/
Model								
Differential pressure switch	RD							
Approvals								
Explosion proof		E						
Sensing element								
Diaphragm (Viton®, range 110 to 157)							4	
Bellow (stainless steel, range 211 to 258)							8	
Type of micro switches								
Deadband								
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
Process connection								
G 1/2 male (standard)								3
1/2 NPT male								6
1/4 NPT female								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
0.05 ... 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 example with options

	RD	E	-	4	C	3	.	111	/	0407	-	9941
Differential pressure switch	RD											
With ATEX approval Explosion proof		E										
Diaphragm Viton®				4								
1 SPDT hermetically changeover switch					C							
Process connection G 1/2 male						3						
Pressure range 2 ... 10 mbar							.	111				
Option: Mounting on 2" pipe									/	0407		
Option: Stainless steel tag plate and wire											-	9941