

RDE4

Differential pressure switch, explosion proof
RDE-###.##

Overview

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



Picture similar



Technical data

Housing

Protection rating (EN60529)	IP66
Case material	Type RA80 Explosion-proof and flame-proof Epoxy painted, Aluminium Captive stainless steel screws
Mounting	Wall mounting, 3 back lugs
Scale	Internal, accuracy on reading $\pm 5\%$ FS

Process

Process connection	G1/2" 1/2" NPT 1/4" NPT female
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Temperature

Ambient temperature	-20°C ... +55°C (T6)
Storage temperature	-40°C ... +70°C
Media temperature	-15°C ... +100°C

Wetted parts

Flange	Stainless steel 1.4404 / AISI 316L
Diaphragm	FKM (Viton®)

Remarks

- These devices must be used as instruments that provide electrical information according to the value of the input variable. They are not intended to be used as a safety accessory. It is the responsibility of the user to check the compatibility of the device with its intended use.

Sensing / Input

Min. measuring range	-2.5 ... 2.5 mbar
Max. measuring range	10 ... 400 mbar

Performance

Repeatability	$\pm 1\%$ FS
Adjustment	2 external adjustment screws on top of the case 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.

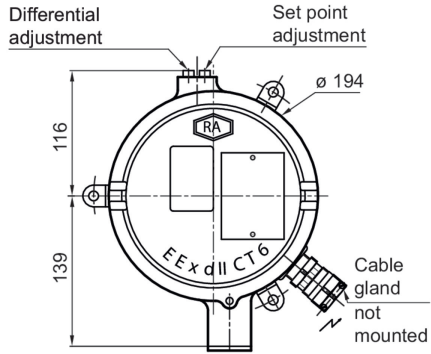
Electrical data

Ground connection	Via internal terminal block
Electrical connection	Via internal terminal block with metallic cable gland for $\varnothing 7$ to 12 mm

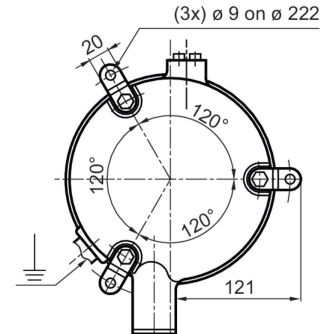
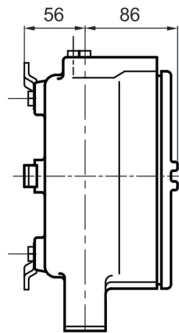
Approval / Conformities

ATEX/IECEX Certificate	LCIE 03 ATEX 6231X (Type RA80) IECEX LCIE 15.0061X
ATEX/IECEX	Ex II 2 GD Further information can be found in the ATEX approval
CE conformity	ATEX directive 2014/34/UE

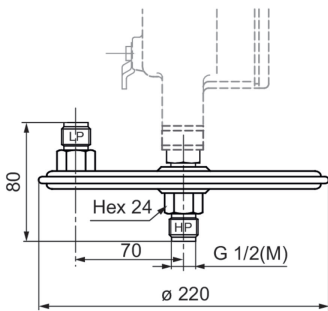
Dimensional drawings (mm)



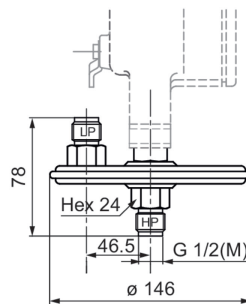
Weight: 4.4 kg



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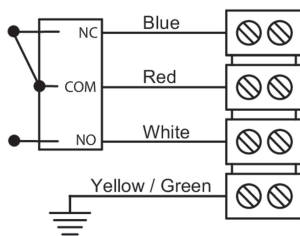


Pressure range codes: 110 - 111 - 121 - 131
Weight: 1.8 kg

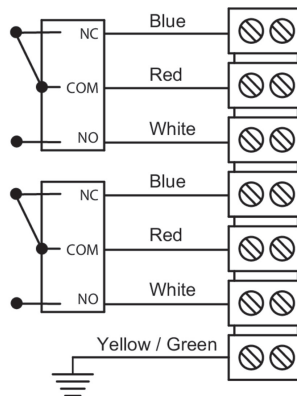


Pressure range codes: 156 - 157
Weight: 1 kg

Electrical connection



1 SPDT



2 SPDT

Electrical connection

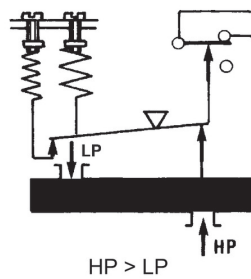
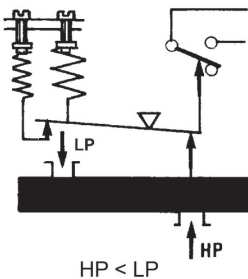
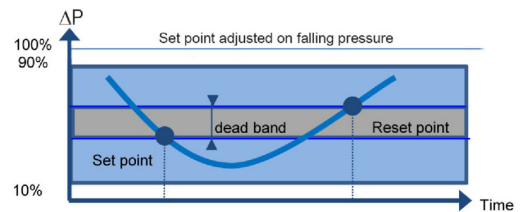
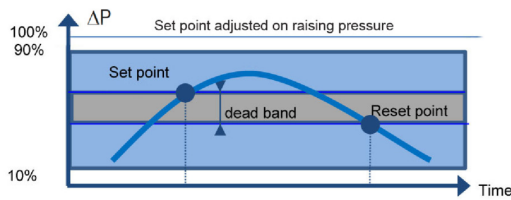
-20°C ≤ Ta ≤ +70°C	Dust IP6x	Gases
	T° surface	Class
Ta = 60°C	80°C	T6
Ta = 70°C	95°C	T5

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

Hazardous areas: zone 1, 2, 21, 22

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.

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 rising pressure
- Static pressure (except RDx6)
- Dead band value (as needed) when using an adjustable dead band switch

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Adjustable ranges

Scale	Max ΔP	Max P Static	Code	Micro-switch dead band °									
				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		

*) 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%.

Micro switch 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...	50 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	N/A		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	

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Ordering reference

Ordering key - Configuration possibilities see website

	RDE	-	4	#	#	.	###
Product	RDE						
Measuring element							
Membran, Viton® (≤400 mbar)				4			
Type of Microswitch							
1 gold contact changeover switch							M
1xSPDT, Standard							A
simultaneous							B
1xSPDT, hermetically							C
1xSPDT hermetic/ultra sensit.?							D
1xSPDT, ultra sensitive							E
simultaneous							F
simultaneous							K
simultaneous							V
simultaneous							W
Process connection							
G 1/2							3
1/2 NPT							6
1/4 NPT F							8
Pressure range							
-2.5 ... 2.5 mbar							110
2 ... 10 mbar							111
2 ... 50 mbar							121
2 ... 100 mbar							131
10 ... 200 mbar							156
10 ... 400 mbar							157

Ordering example

	RDE	-	4	A	3	.	110
Product	RDE						
Measuring element							
Membran, Viton® (≤400 mbar)					4		
Type of Microswitch							
1xSPDT, Standard							A
Process connection							
G 1/2							3
Pressure range							
-2.5 ... 2.5 mbar							110

Options

Setpoint factory adjusted	SETP	2.1 Certificate	Q001
For oxygen applications	0765	2.2 Certificate	Q002
Mounting on 2 pipe	0407	3.1 Material certificate	Q003
stainless steel label wired*	9941	3.1 Certif. setpoints adjust.	Q011
Setpoint adjust. lead sealed	8990		