

# Relative and differential pressure switch type 610

Pressure range  
-1 ... -320 mbar / 1 ... 500 mbar



Type 610 pressure switches are especially suited to the monitoring of non-flammable gases in general industrial equipment.

Exemplary accuracy is maintained throughout the high pressure range of this switch.

- High accuracy (especially the upper pressure ranges with 17 ideally designed pressure range incrementations)
- Ease of accurate adjustment by customer
- Repeatability of switching points up to  $< \pm 0.1$  mbar
- Rugged mechanics with high operating reliability and switching capacities up to 10 A

## Technical overview

### Pressure range

Relative	1 ... 500 mbar
Negative	-1 ... -320 mbar

### Operating conditions

Medium	Air and neutral gases	
Temperature	NBR	0 ... +80 °C
	FPM	-10 ... +80 °C
	EPDM	-10 ... +80 °C
	Q (Silicone)	-40 ... +80 °C
	Storage	-40 ... +80 °C
Tolerable overload	See order code selection table	
Lowest turn-on pressure	≥ 1 mbar	
Lowest switching difference	≥ 0.5 mbar	

### Materials

Case	Duroplast	
Materials in contact with the medium	Diaphragm	NBR based
		EPDM
		FPM
		Silicone
	To base Inox and diaphragm	Inox 1.4301, 1.4305, 1.4310, 1.4104
To base, galvanized sheet steel and Diaphragm	Inox 1.4310, brass, aluminium	
To base, nickel-plated brass and Diaphragm	Inox 1.4301, 1.4310	
With medium in pressure chamber P2:	Brass, nickel plated brass, CuSn, Bakelit PF-PH, polyamide and polyacetale, AgCdO, NBR, galvanized steel	

### Electrical overview

Nominal voltage	250 VAC	
Nominal current for resistive loading	1 A	10 A
Nominal current for motor loading	0.5 A	3 A
Contact system	Changeover contact	
Service life	mechanically	10 <sup>6</sup> switching cycles

### Protection standard

IP 30	IP 65 on request
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### Repeatability

±5% of the switching point with diaphragm NBR / Silicone	minimum ± 0.1 mbar
±10% of the switching point with diaphragm FPM / EPDM	minimum ± 0.2 mbar

### Electrical connection

Screw terminals	
Tab connectors (AMP)	6.3 mm
Cable gland PG9 (not part of scope of delivery / see accessories)	

### Pressure connection

Pipe Ø 6mm and thread	G ¼ M12x1
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### Installation arrangement

Pressure connections downwards

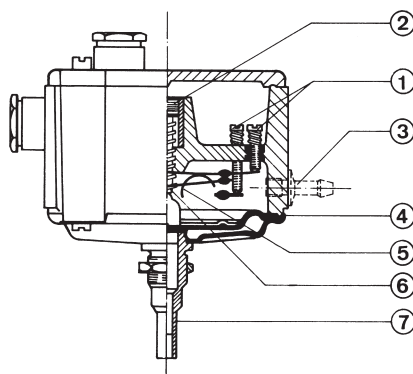
**Remark:** By changing the mounting position the switching points also change. The adjustment ranges are in relation with the mounting position.

### Weight

~ 260 g

### Packaging

Single packaging in cardboard



#### Legend to cross-section drawing

- 1 Adjustment of switching difference
- 2 Adjustment of switching points
- 3 Connection for differential pressure
- 4 Diaphragm
- 5 Switchover contact element
- 6 Compression spring
- 7 Pressure or vacuum connection

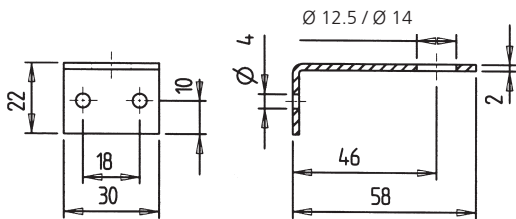
**Order code selection table**

610. X X X X X

Pressure mode	Relative					9					
	Differential					5					
	Negative					6					
	Negative differential					7					
Pressure range <sup>1)</sup>		<b>p max.</b>	<b>pt <sup>2)</sup></b>	<b>Switching capacity 250 VAC</b>							
	1 ... 4 mbar	30 mbar	50 mbar	1 A		9,5	0		0		
	4 ... 30 mbar	70 mbar	100 mbar	1 A		9,5	1				
	8 ... 70 mbar	70 mbar	100 mbar	1 ... 10 A		9,5	2				
	7 ... 25 mbar	70 mbar	100 mbar	1 ... 10 A		9,5	3				
	10.5 ... 45 mbar	70 mbar	100 mbar	1 ... 10 A		9,5	4				
	28.5 ... 120 mbar	350 mbar	500 mbar	1 ... 10 A		9,5	5				
	30 ... 160 mbar	350 mbar	500 mbar	1 ... 10 A		9,5	6				
	50 ... 300 mbar	600 mbar	1000 mbar	1 ... 10 A		9,5	7				
	65 ... 500 mbar	600 mbar	1000 mbar	1 ... 10 A		9,5	8				
	-1 ... -2 mbar	-30 mbar	-50 mbar	1 A		6	0		0		
	-2 ... -7.5 mbar	-30 mbar	-50 mbar	1 A		6	1				
	-4.8 ... -11.5 mbar	-70 mbar	-100 mbar	6 A		6,7	2				
	-8 ... -20 mbar	-70 mbar	-100 mbar	6 A		6,7	3				
	-18 ... -47 mbar	-350 mbar	-500 mbar	6 A		6,7	4				
	-42 ... -80 mbar	-350 mbar	-500 mbar	6 A		6,7	5				
	-80 ... -200 mbar	-600 mbar	-1000 mbar	6 A		6,7	6				
	-180 ... -320 mbar	-600 mbar	-1000 mbar	6 A		6,7	7				
	Pressure connection / pressure case	Hose connection $\varnothing$ 6 mm and G ¼			Galvanized sheet steel					2	
		Hose connection $\varnothing$ 6 mm and G ¼			Inox sheet steel					3	
Hose connection $\varnothing$ 6 mm and G ¼				Nickel plated brass					4		
Hose connection $\varnothing$ 6 mm and M12x1				Inox sheet steel					5		
Hose connection $\varnothing$ 6 mm and M12x1				Galvanized sheet steel					6		
Hose connection $\varnothing$ 6 mm and M12x1				Nickel plated brass					7		
Diaphragm material	NBR based									0	
	FPM									2	
	EPDM									4	
	Q (Silicone)									6	
Switching points (optional)	Two factory set switching points		(please specify on order e.g.: W10/8mbar)							W	
	One factory set switching point high		(please specify on order e.g.: U25mbar)							R	
	One factory set switching point low		(please specify on order e.g.: R50mbar)							U	

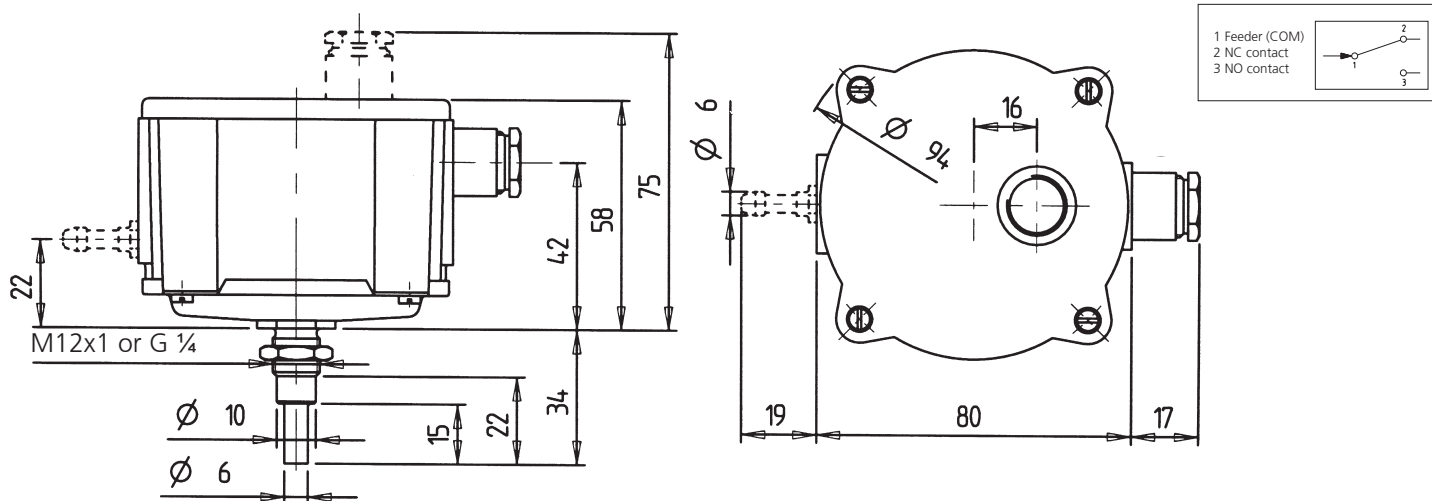
**Accessories <sup>3)</sup>**

	Order number
Mounting bracket with hole $\varnothing$ 12.5 mm for M12x1	104259
Mounting bracket with hole $\varnothing$ 14 mm for G ¼	102872
Connector set (Tab connectors AMP)	103479
Cable gland PG9	103559
Calibration Certificate	104551


<sup>1)</sup> Other pressure range on request

<sup>2)</sup> pt = test pressure

<sup>3)</sup> Accessories supplied loose



Setting ranges

