

**DF010**  
**DF050**

## Difference pressure sensor



**DF0x0**



**DF0x0 display**

**Summary**      **Pressure and differential pressure sensor for overpressure, underpressure and differential pressure measurement of air and other non-aggressive and non-flammable gases. A piezoresistive measuring element provides high accuracy and reliability.**

**Application**      • **Clean room technologies, medical applications, filtering technologies, air handling units, variable speed drives control etc.**

**Function**      An elastic diaphragm transmits the pressure difference to the measuring element. The electric signal is amplified and evaluated and sent to the output terminals.-

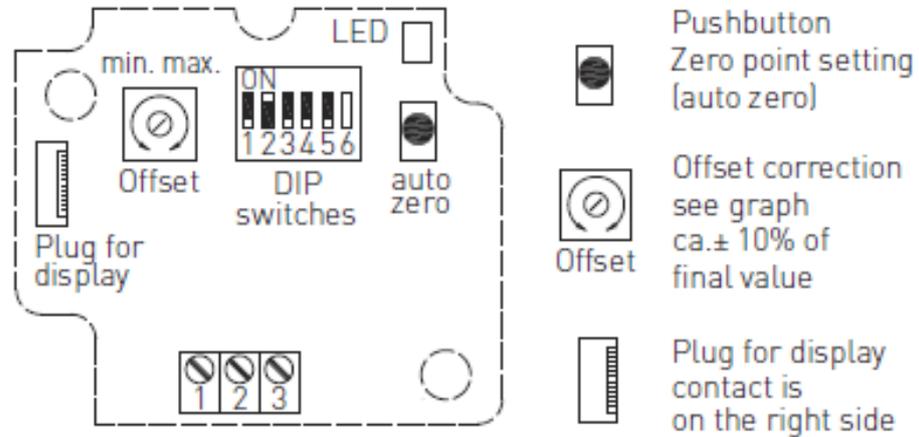
<b>Technical data</b>	
Power supply	24 V (+/- 20 %) AC and 15...36 V (+/- 10 %) DC for 0..10V output 15..36 V (+/- 10 %) DC for 4..20 mA output
Measuring ranges	see table below
Consumption	< 1 VA (24 V DC), < 2 VA (24 V AC)
Output signal	0..10 V or 4..20 mA, see type designation
Connection	cable gland M16, screw terminals, wires 0,14 ... 1,5 mm <sup>2</sup>
Media temperature	0 ... 50 °C
Media connection	4 / 6 x 11mm (for inner hose diameter 4..6 mm)
Medium	air and non-aggressive and non-combustible gases
Accuracy	± 3 % of measuring range at 20 °C

Linearity	< ± 1 % of measuring range
Hysteresis	0,3 % of measuring range
Temperature drift	± 0,1 % / °C
Zero point - offset	± 10 % of measuring range
Max. overpressure and underpressure	max. 5x measuring range
Signal filtering	switchable 1 s / 10 s
Cover	polyamide with 30% glass fibre reinforcing, RAL 9010; 72 x 64 x 37,8 mm (without display); 72 x 64 x 43,3 mm (with display)
Electrical connection	screw terminals for wires 0,14 – 1,5 mm <sup>2</sup>
Air humidity	< 95 %, non-condensing
Protection degree	IP65 (according to EN 60 730)
Protection class	III (according to EN 60 529)
Accessories (included in delivery)	<b>ASD-06</b> , mounting set containing: 2 straight plastic tubes 2m PVC hose 4 screws
Accessories (optional)	<b>ASD-07</b> , connection nipples 2 plastic tubes, at 90 degree angle <b>DAL-1</b> , pressure outlet for ceiling or in-wall installation

## Sensor types

Type	Measuring ranges (selectable)	Output
<b>DF010-U</b>	-100...100 Pa -300...300 Pa -500...500 Pa -1000...1000 Pa	0...10 V
<b>DF050-U</b>	-1000...1000 Pa -2000...2000 Pa -3000...3000 Pa -5000...5000 Pa	0...10 V
<b>DF010-I</b>	-100...100 Pa -300...300 Pa -500...500 Pa -1000...1000 Pa	4...20 mA
<b>DF050-I</b>	-1000...1000 Pa -2000...2000 Pa -3000...3000 Pa -5000...5000 Pa	4...20 mA

## Terminals



### DF...U

- 1 Power 24 V AC / DC
- 2 Output 0..10 V, pressure in Pa
- 3 GND – common ground

### DF...I

- 1 Power 24 V DC
- 2 Output 4...20 mA, pressure in Pa
- 3 GND – common ground

Type	Measuring ranges (selectable)	DIP switch 1 and 2
<b>DF010</b>	-100...100 Pa	OFF OFF
	-300...300 Pa	ON OFF
	-500...500 Pa	OFF ON
	-1000...1000 Pa	ON ON
<b>DF050</b>	-1000...1000 Pa	OFF OFF
	-2000...2000 Pa	ON OFF
	-3000...3000 Pa	OFF ON
	-5000...5000 Pa	ON ON

#### DIP switch 3: measuring range

- OFF 0...+ range
- ON – range...+ range

#### DIP switch 4: characteristic line

- OFF linear
- ON square root extraction

#### DIP switch 5: signal filtering

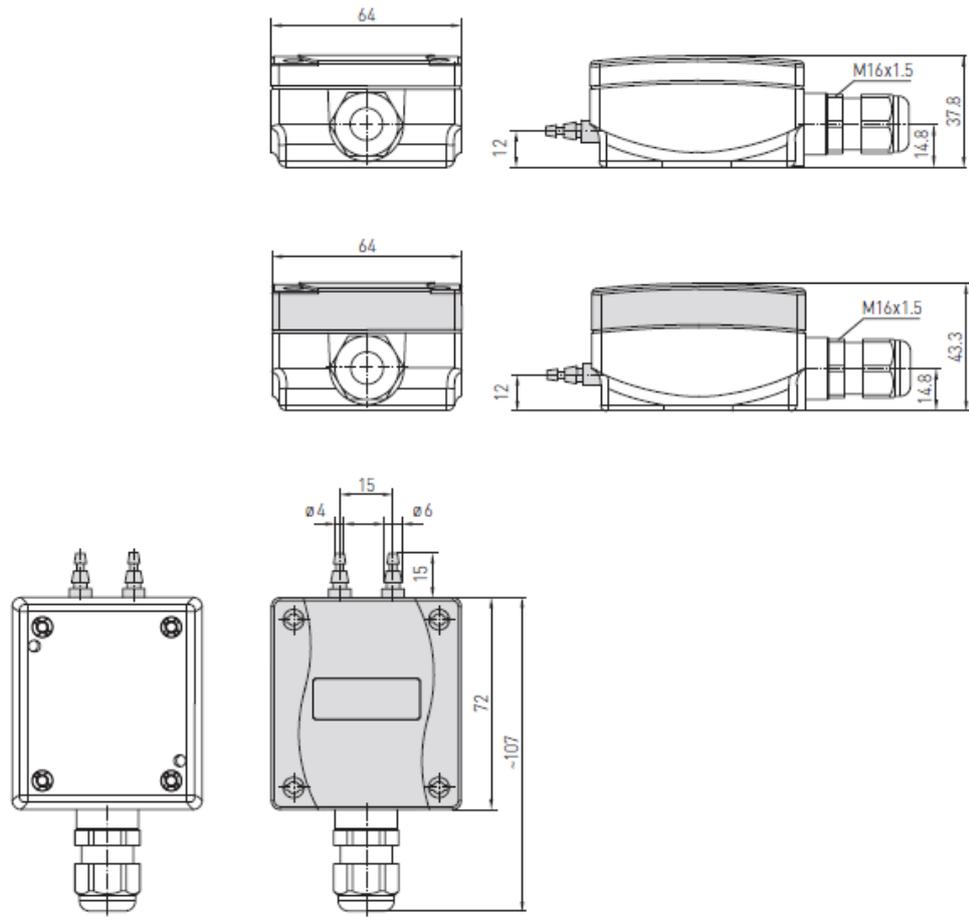
- OFF 10 s (slow)
- ON 1 s (fast)

#### DIP switch 6: not used

The pressure inputs are:

- P1 (+)** higher pressure
- P2 (-)** lower pressure

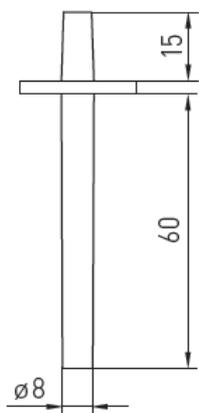
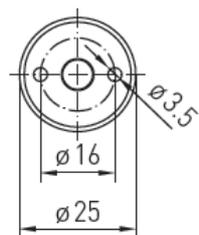
## Dimensions



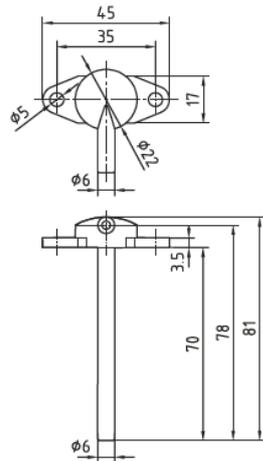
Dimensions are in *mm*.

## Accessories

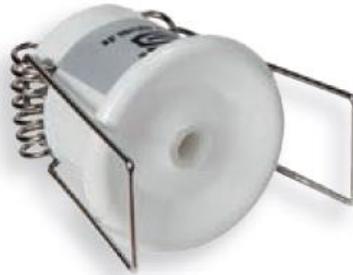
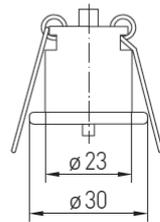
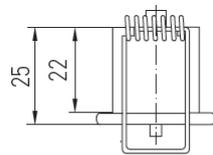
### ASD-06



**ASD-07**

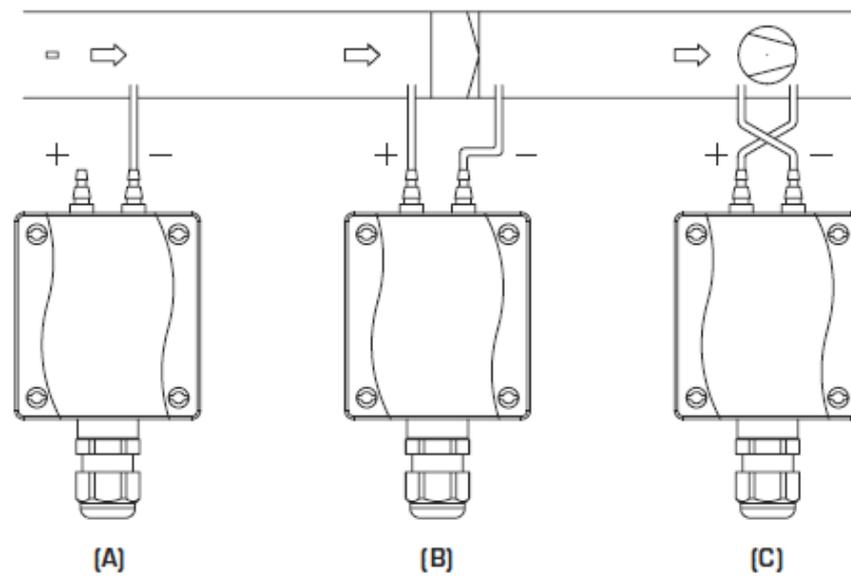


**DAL-1**



Dimensions are in *mm*.

**Installation**



- A underpressure, P1 (+) is open, P2 (-) installed in the duct
- B on a filter, heat recovery plate exchanger, etc.
- C on a fan

**Changes in  
versions**

05/2016 — New sensor design version and dimensions.