

SDF-... Difference pressure sensor



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. It is sent to the output terminals and pressure value is displayed.

Technical data

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), < 2,2 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 ²
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	72 x 64 x 37,8 mm, polyamide with 30% glass fibre reinforcing, RAL 9010
Electrical connection	screw terminals for wires 0,14 – 1,5 mm ²
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)	ASD-06 , mounting set containing: 2 straight plastic tubes 2m PVC hose 4 screws
Accessories (optional)	ASD-07 , connection nipples 2 plastic tubes, at 90 degree angle DAL , pressure outlet for ceiling or in-wall installation

Sensor types

The sensors are supplied in several type designations:

Type	Measuring ranges (selectable)	DIP switches 1 and 2	Output
SDF010-U	-100...100 Pa -300...300 Pa -500...500 Pa -1000...1000 Pa	OFF OFF ON OFF OFF ON ON ON	0...10 V
SDF050-U	-1000...1000 Pa -2000...2000 Pa -3000...3000 Pa -5000...5000 Pa	OFF OFF ON OFF OFF ON ON ON	0...10 V
SDF010-I	-100...100 Pa -300...300 Pa -500...500 Pa -1000...1000 Pa	OFF OFF ON OFF OFF ON ON ON	4...20 mA
SDF050-I	-1000...1000 Pa -2000...2000 Pa -3000...3000 Pa -5000...5000 Pa	OFF OFF ON OFF OFF ON ON ON	4...20 mA

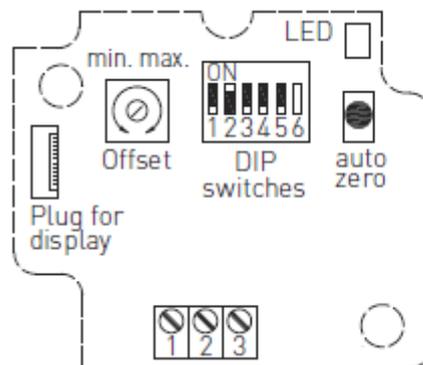
Terminals

SDF...U

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

SDF...I

- 1 Power 24 V DC
- 2 Output 4...20 mA, pressure in Pa
- 3 GND – common ground (optional for LCD backlighting)



-  Pushbutton
Zero point setting
(auto zero)
-  Offset correction
see graph
ca. ± 10% of
final value
-  Plug for display
contact is
on the right side

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)

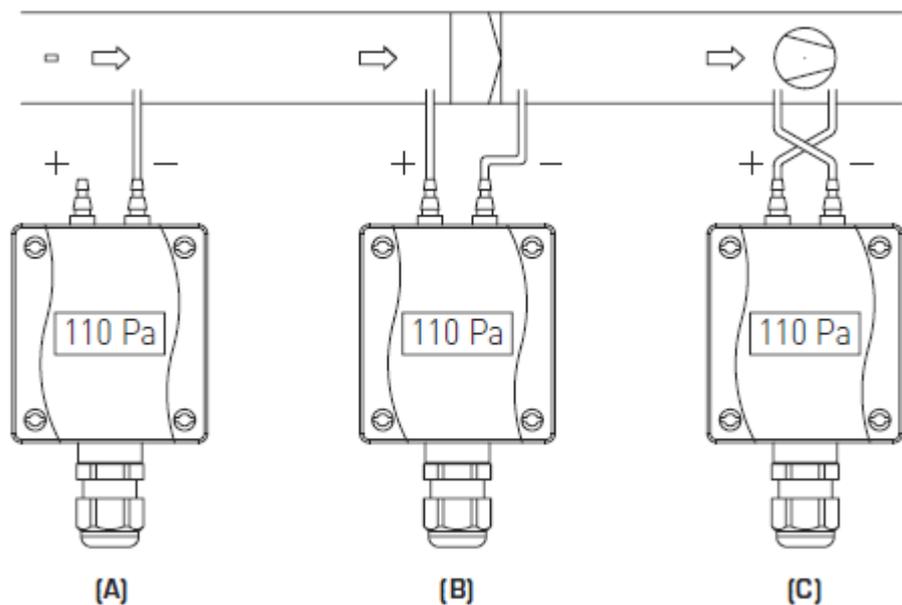
DIP switch 6: not used

The pressure inputs are:

P1 (+) higher pressure

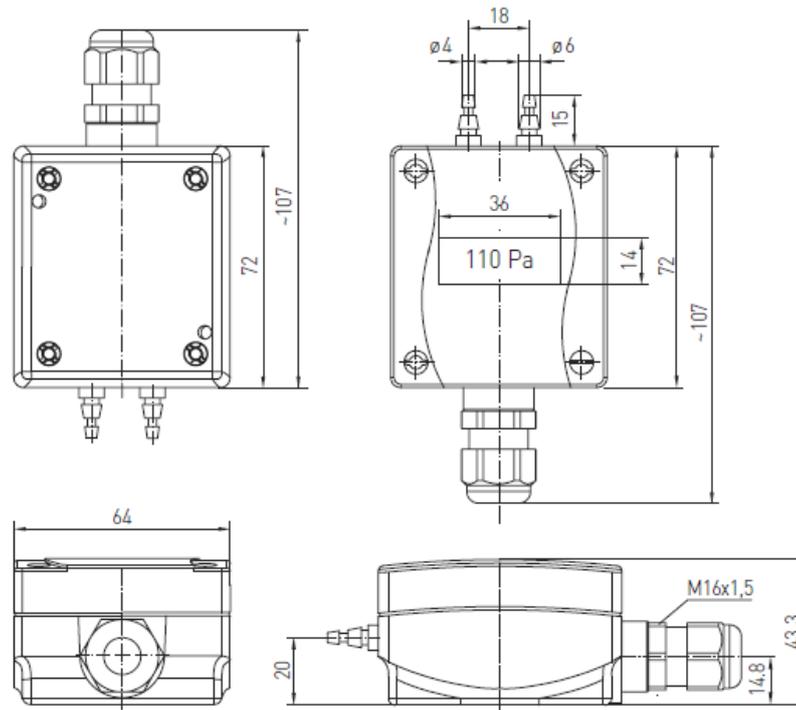
P2 (-) lower pressure

Installation



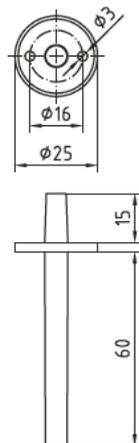
- A underpressure, P1 (+) is open, P2 (-) installed in the duct
- B on a filter, heat recovery plate exchanger, etc.
- C on a fan

Sensor dimensions

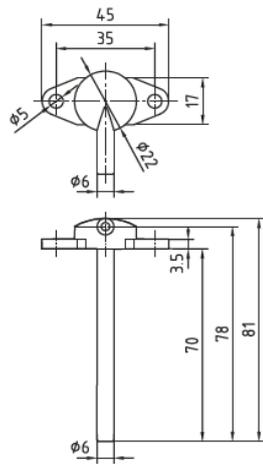


Accessories

ASD-06



ASD-07



DAL

