Datasheet SDP3x-Analog

Differential Pressure Sensor with Analog Output

- Smallest size enables portable applications
- Reflow solderable – Pick & Place
- Configurable analog output
- Calibrated and temperature compensated
- Excellent repeatability, no drift

Product Summary

The SDP3x sensor family is Sensirion's series of small differential pressure sensors designed for high-volume applications where size is a key requirement. It builds on the next generation CMOSens® sensor chip that is at the heart of Sensirion's new differential pressure and flow sensing platform.
The analog SDP3x sensors offer a calibrated and temperature compensated analog voltage output. The output signal is configurable: different measurement speeds, output curves and temperature compensations can be selected – even dynamically during operation mode.

Benefits of Sensirion's CMOSens® Technology

- High reliability and long-term stability
- Best signal to noise ratio
- Industry-proven technology with a track record of more than 15 years
- Designed for mass production
- High process capability

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1. Sensor Performance

1.1 Differential Pressure Specification[1]

Parameter	Configuration	SDP36	SDP37
Measurement range [2]	Linear	- 50 to 500 Pa (-0.2 to 2 inH_2O)	- 12.5 to 125 Pa (-0.05 to 0.5 inH_2O)
	Square Root	- 500 to 500 Pa (- 2 to 2 inH_2O)	- 125 to 125 Pa (- 0.5 to 0.5 inH_2O)
Zero point accuracy [3,4,5]		0.1 Pa [5]	0.08 Pa [5]
Span accuracy [3,4,5]		3% of reading [5]	3% of reading [5]
Zero point repeatability [4,5]		0.03 Pa [5]	0.025 Pa [5]
Span repeatability [4,5]		0.5% of reading [5]	0.5% of reading [5]
Span shift due to temperature variation		< 0.5% of reading per 10°C	< 0.5% of reading per 10°C
Offset stability		< 0.01 Pa/year	< 0.01 Pa/year
Response time (τ_{63})	Slow	< 9 ms	
	Fast	< 5 ms	
Internal digital resolution		16 bit	
Calibrated for		Air, N_2	
Media compatibility		Air, N_2, O_2, non-condensing	
Calibrated temperature range		-40 °C to +85 °C	

[1] Unless otherwise noted, all sensor specifications are valid at 25°C with VDD = 3.3 V and absolute pressure = 966 mbar.

[2] For other pressure ranges contact Sensirion

[3] Includes repeatability

[4] Total accuracy/repeatability is a sum of zero-point and span accuracy/repeatability.

[5] Output voltage integral non linearity and output voltage noise are not included and defined later in chapter 2.1. Note that the effect of output voltage integral non linearity and output voltage noise on accuracy is highly dependent on the output configuration (linear or square root).