

ZXP6010 Differential Pressure Sensor Specification

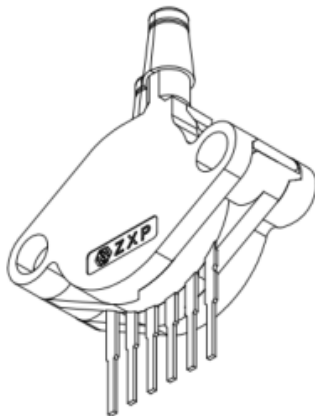
(Version A1.2)

ZXP6010 differential pressure sensor

● Summary:

The ZXP6010 is an amplified analog, differential pressure MEMS sensor offering state-of-the-art pressure transducer technology and CMOS mixed signal processing technology to produce an analog, fully conditioned, pressure and temperature compensated sensor.

Combining the pressure sensor with a signal-conditioning ASIC in a single package simplifies the use of advanced silicon micro-machined pressure sensors. The pressure sensor can be mounted directly on a standard printed circuit board and a high level, calibrated pressure signal can be acquired from the analog output.



ZXP6010DAD



ZXP6010DAA

● Product features

- Pressure type: differential pressure
- Operating temperature: $-40 \sim +125^{\circ}\text{C}$
- 1% the maximum error over 0°C to 85°C
- Ideally suited for microprocessor-based or microcontroller based systems
- High reliability package
- Two installation methods: Unibody and SOP

● Application field

- Medical applications: sleep respiration detection, CPAP (continuous positive airway pressure), ventilators, oxygenators, negative pressure wound treatment, airflow monitoring, etc.
- Industrial applications: fire residual pressure, airflow measurement, pressure switch, pneumatic gauge, safety cabinet, life science, gas flow meter, liquid level measurement, etc.
- Consumer electronics: wearable devices, white goods.

● Limit operating parameter

Table 1 Table of limit working parameters

Characteristic	Symbol	Value	unit
Maximum pressure	P_{max}	40	KPa
Storage Temperature	T_A	- 40 - + 125	°C

● The performance parameters

Table 2 Performance parameters

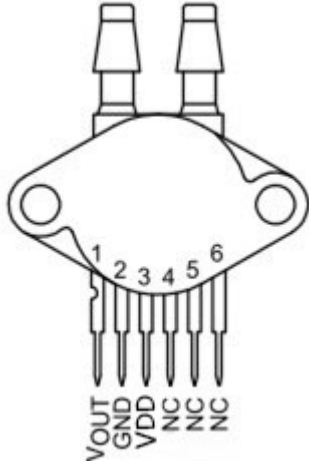
Characteristic	Minimum	Typical	Maximum	Units
Pressure range	0 ~ 10			KPa
Supply voltage	4.75	5	5.25	V
Supply current	-	5.0	10	mA
Output voltage	0.2	-	4.7	V
Accuracy	-1.5	-	1.5	%FS
Operating Temperature	- 40	-	+ 125	°C

Note:

1. Work environment ($V_S = 5Vdc$, $T_A = 25^\circ C$).
2. Range can be customized according to customer needs.
3. Accuracy refers to the output accuracy of the product in the clean gas environment within the compensation temperature range.

● Pin definition

ZXP6010DAD encapsulation:

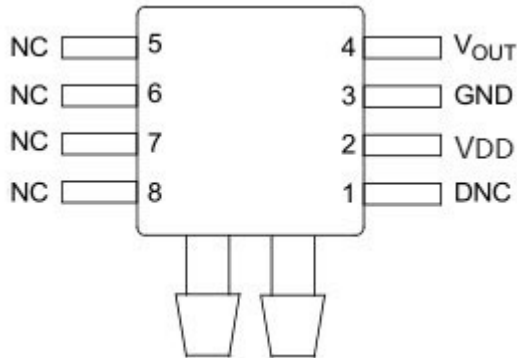


Encapsulation figure

Pin No.	Pin Function	Instructions
1	VOUT	Analog output
2	GND	Power Ground
3	VDD	Supply Voltage
4	NC	empty
5	NC	empty
6	NC	empty

Encapsulation defined

ZXP6010DAA encapsulation:

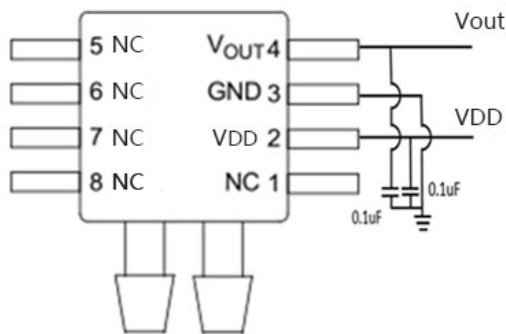


Encapsulation figure

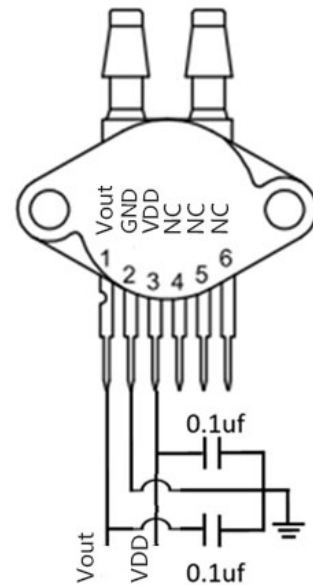
Pin No.	Pin Function	Instructions
1	NC	empty
2	VDD	Supply Voltage
3	GND	Power Ground
4	VOU	Analog output
5	NC	empty
6	NC	empty
7	NC	empty
8	NC	empty

Encapsulation defined

● Typical Applications Circuit

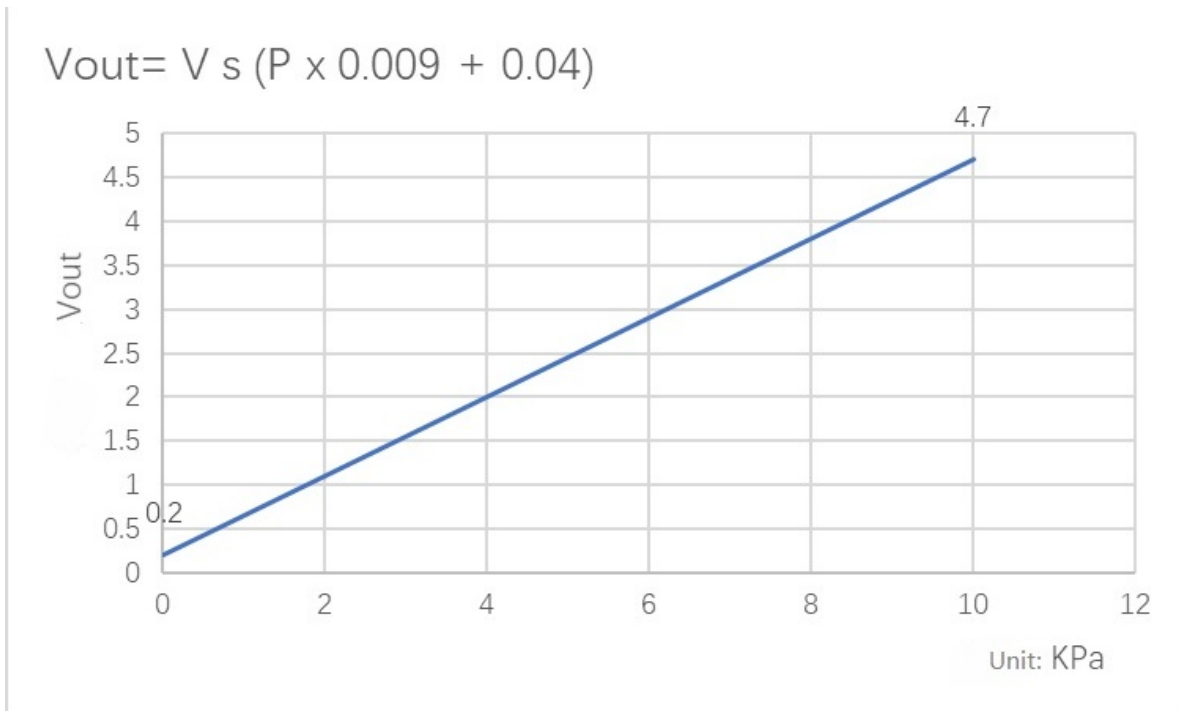


ZXP6010DAA typical application circuit



ZXP6010DAD typical application

● Output Function



Note:

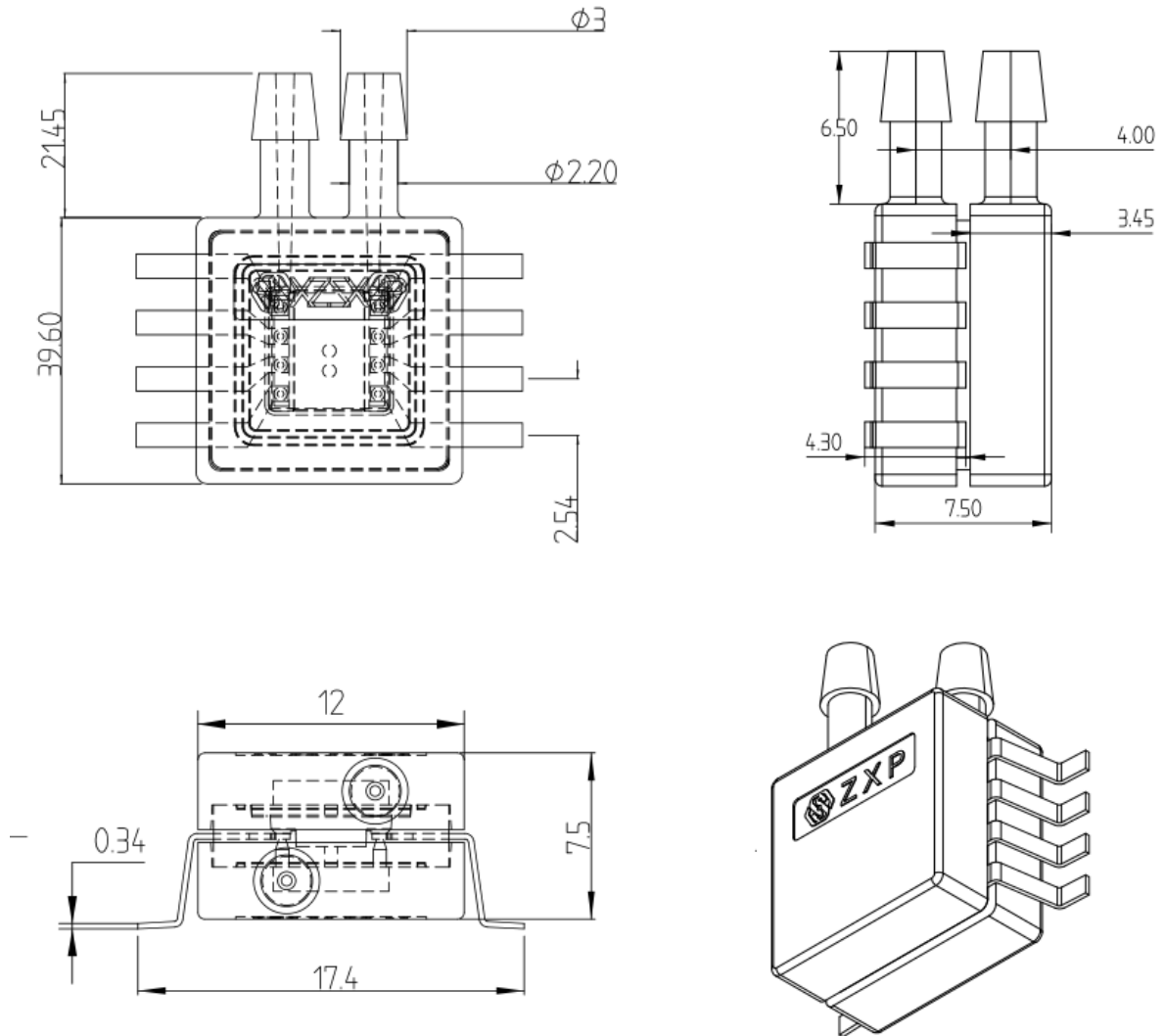
$$V_{out} = v * (P + 0.009 * 0.04)$$

± (Pressure error * temperature coefficient * 0.09 * V_s)

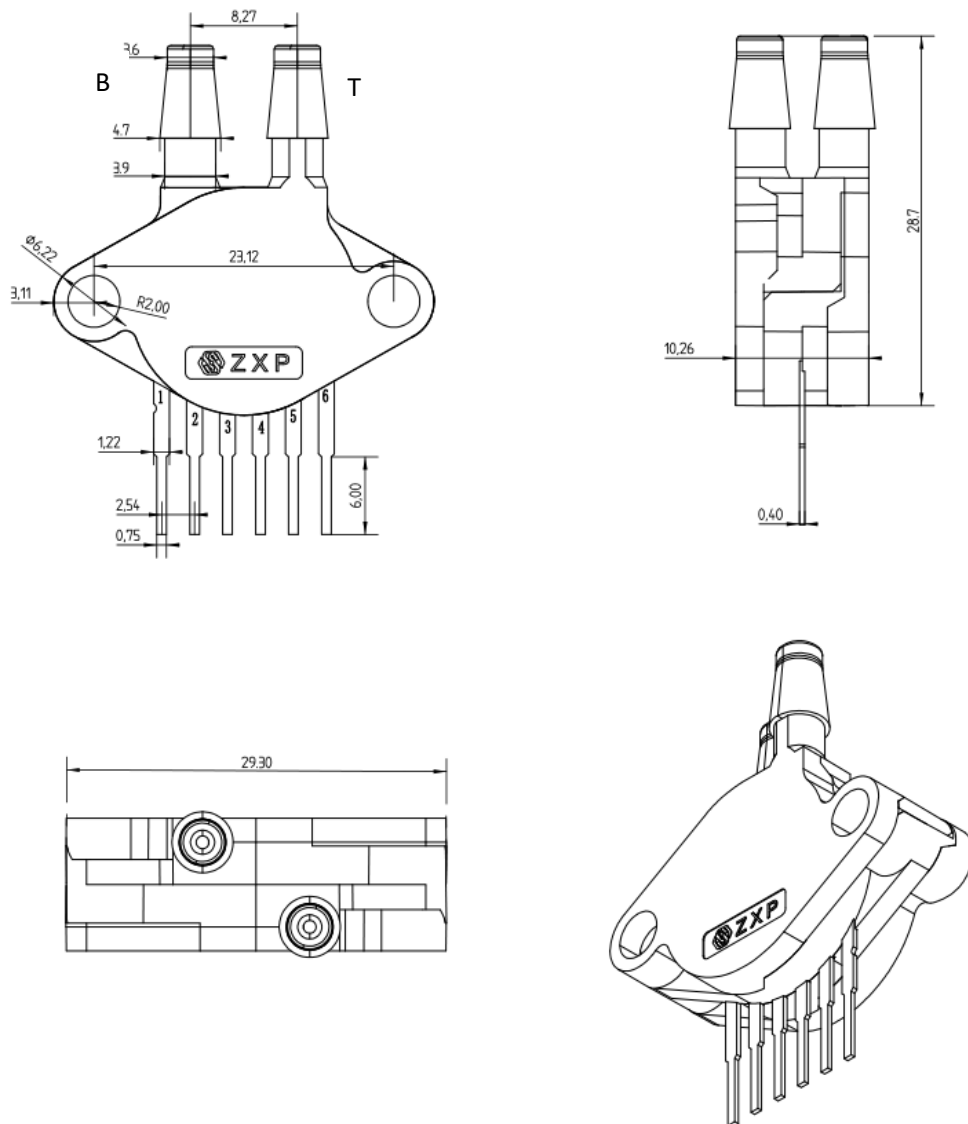
$$V = 5.0 \text{ V} + / - 0.25 \text{ VDC}$$

● Package Dimensions

ZXP6010DAA package size (Unit:mm)



ZXP6010DAD package size:



Package dimension drawing

Description:

- 1) All dimensions are in mm. The tolerance position is not marked, and the dimensional tolerance is $\pm 0.13\text{mm}$.
- 2) B is the gas pipe connected to the bottom of the sensor, T is the gas pipe connected to the top of the sensor. By default, the pressure of the top gas pipe is positive pressure, and the output of the sensor increases with the increase of the pressure of the top gas pipe.

● Order information

Product model	Minimum pressure	Maximum pressure	Pressure type	Output type	Encapsulation type	Packaging form
ZXP6010DAD	0 KPa	10KPa	Differential pressure	simulation	Vertical twin columns	-
ZXP6010DAA	0 KPa	10KPa	Differential pressure	simulation	Vertical bilateral air column	-