

# GP-310 Flush Diaphragm Pressure Sensor

## Features

- ✓ Flush diaphragm
- ✓ Piezoresistive ceramic pressure transducer
- ✓ Pressure range 0 ~ 5 bar ~ 200 bar
- ✓ Radiometric or I<sup>2</sup>C output
- ✓ Excellent resistance to corrosion and abrasion
- ✓ Fully integrated signal conditioning
- ✓ Thermally compensated



## Introduction

GP-310 pressure sensor utilizes a ceramic base plate and flush diaphragm and operates on the piezoresistive principle. The Wheatstone bridge is screen printed on one side of the flush ceramic diaphragm and then glued to the sensor body. The Wheatstone bridge is oriented internally and has an internal cavity. Signal conditioning electronics are integrated on the back circuit board to produce a 0.5~4.5V ratio metric output, temperature compensation and calibration of the sensor. Due to the excellent chemical resistance of the Al<sub>2</sub>O<sub>3</sub> ceramics, the GP-310 sensor is suitable for use in almost all corrosive media.

## Specification

Items*	Alias	Min.	Typ.	Max.	Unit
<b>Pressure Range</b>	-	0	-	1000	kPa
<b>Power Supply<sup>1</sup></b>	V <sub>s</sub>	4.75	5.0	5.25	Vdc
<b>Current</b>	IO	-	3.0	10.0	mAdc
<b>Min. Output</b>	V <sub>Off</sub>	0.44	0.5	0.56	Vdc
<b>Max. Output</b>	V <sub>FSO</sub>	4.44	4.5	4.56	Vdc
<b>Full Span</b>	V <sub>FSS</sub>	3.94	4	4.06	Vdc
<b>Accuracy<sup>2</sup></b>	-	-	±1.5	±2	% V <sub>FSS</sub>
<b>Sensitivity</b>	V/P	-	2.66	-	mV/kPa
<b>Response Time (10%~90%)</b>	t <sub>R</sub>	-	1.0	-	mS
<b>Drift Stability<sup>3</sup></b>	-	-	±0.5	-	%V <sub>FSS</sub>
<b>Power Up Time</b>	t <sub>pon</sub>	-	-	100	mS
<b>Weight</b>	~5 g (without wires)				
<b>Diaphragm Type</b>	Ceramic Al <sub>2</sub> O <sub>3</sub> 96.0%				
*All the parameters @ 0 to 85°C conditions.					
1 Within this operating voltage range, the chip output is proportional and linear.					
2 Includes linearity error, hysteresis error, temperature error, zero temperature error and others.					
3 Output offset of the sensor after 1000 hours of pulse pressure and temperature cycling.					

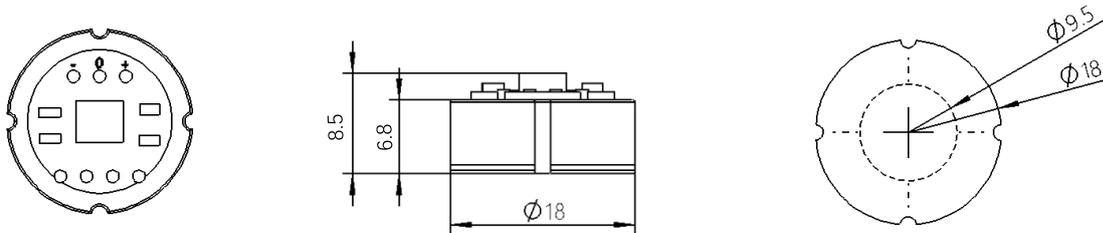
## Reference

Items	Alias	Rating Value	Unit
Max. Pressure	PMAX	3000	kPa
Max. Voltage	Vmax	20	Vdc
Inverse Voltage	Vmax	-20	Vdc
ESD (MIL 883, Method 3015.7.)		±4	kV
Storage Temperature	TSTG	-50 to 150	°C
Work Temperature	TA	-40 to 125	°C

**Note:**

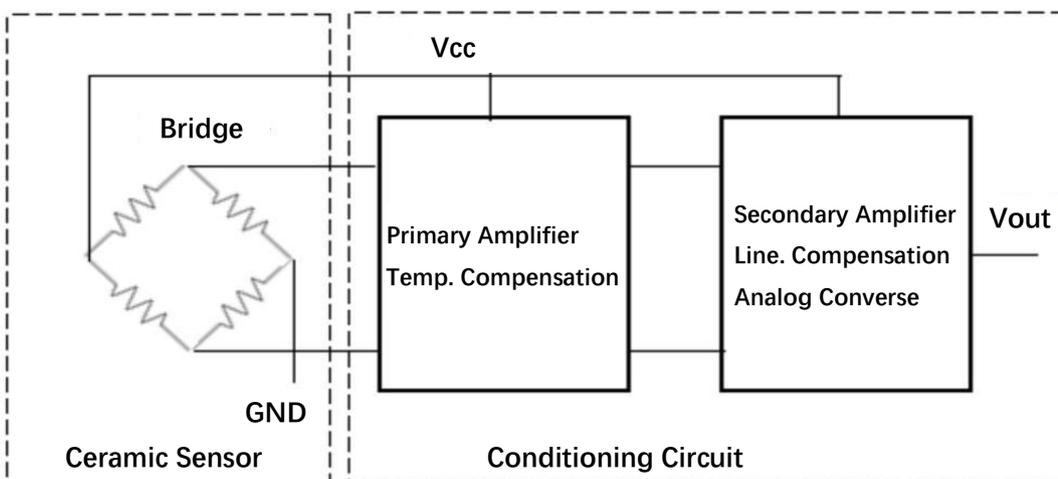
- Exceeding the max ratings may result in degradation of performance or damage to the sensor.
- The max input and output currents are controlled by the impedance between output to ground and power in the actual circuit.

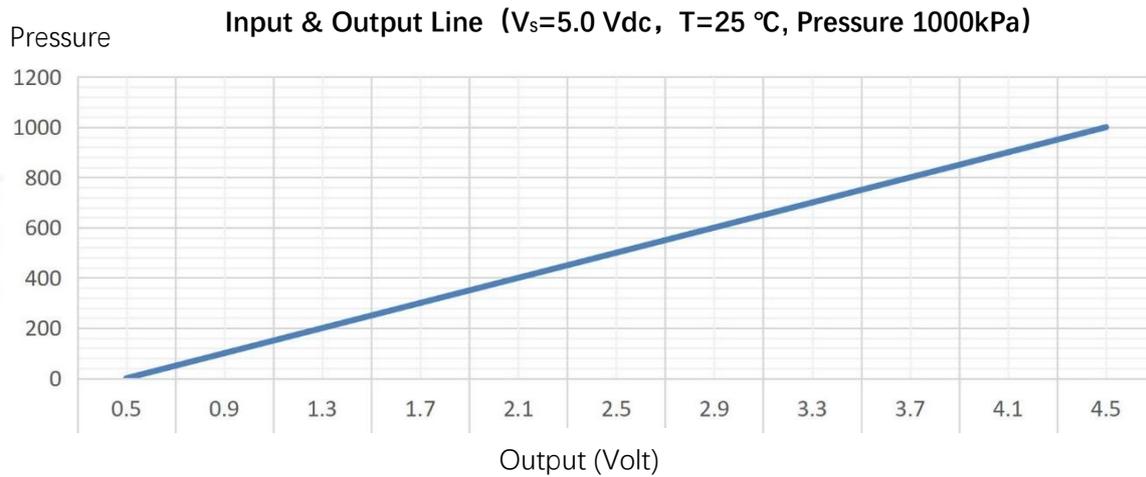
## Dimensions (mm)



## Electrical Connections

Pad	Mark	Wire Color	Definition
1	+	Red	VDD
2	○	Blue	OUT
3	-	Black	GND





## Order Guide

GP-310 Pressure Sensor			
	<b>Code1</b>	Range	
	005	0...5 bar	G/S
	010	0...10 bar	G/S
	020	0...20 bar	G/S
	050	0...50 bar	G/S
	100	0...100 bar	G/S
	200	0...200 bar	G/S
	XXX	other	G/S
	<b>Code2</b>	Pressure type	
	G	Gauge	
	S	Sealed Gauge	
	<b>Code3</b>	Calibration	
	1	Calibrated	
	2	No temp. compensation (calibration at room temp.)	
3	Not calibrated, not compensated (electrical test only)		
<b>Code3</b>	Connector		
1	Tinned pads		
2	50mm wires		
Example: <b>GP-310-010-G-1-2</b>			