GP310 pressure sensor

Features

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

Introduction

GP310 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 Al2O3 ceramics, the GP310 sensor is suitable for use in almost all corrosive media.

Specification

Items*	Alias	Min.	Typ.	Max.	Unit
Pressure Range	-	0	-	1000	kPa
Power Supply[1]	V_S	4.75	5.0	5.25	Vdc
Current	IO	-	3.0	10.0	mAdc
Min. Output	VOff	0.44	0.5	0.56	Vdc
Max. Output	VFSO	4.44	4.5	4.56	Vdc
Full Span	VFSS	3.94	4	4.06	Vdc
Accuracy[2]	-	-	±1.5	±2	% V_{FSS}
Sensitivity	V/P	-	2.66	-	mV/kPa
Response Time (10%~90%)	tR	-	1.0	-	mS
Drift Stability[3]	-		±0.5	-	%VFSS
Power Up Time	tpon	-	-	100	mS
Weight	~5 g (without wires)				
Diaphragm Type	Ceramic Al2O3 96.0%				

*All the parameters @ 0 to 85℃ 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.

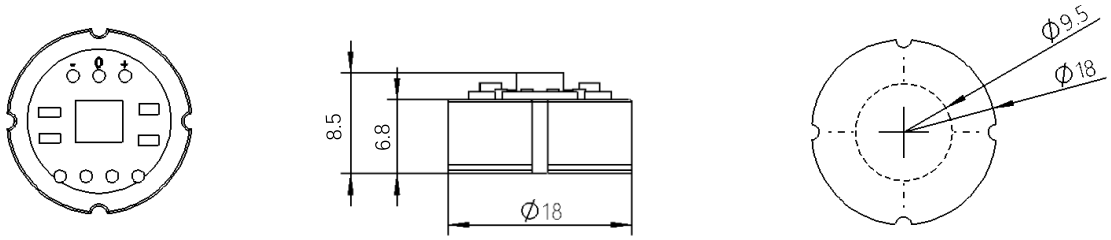
Reference

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	℃
Work Temperature	TA	-40 to 125	℃

Note:

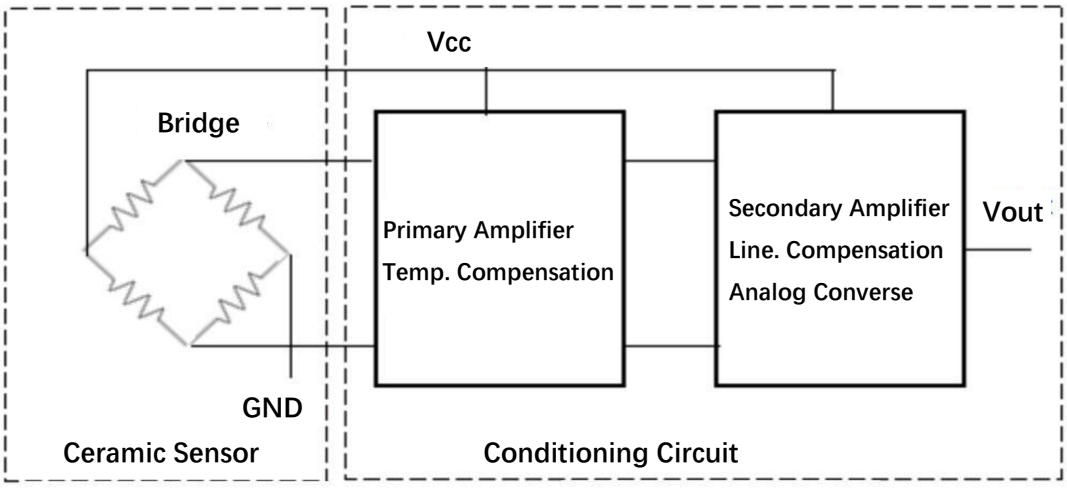
1. Exceeding the max ratings may result in degradation of performance or damage to the sensor.
2. The max input and output currents are controlled by the impedance between output to ground and power in the actual circuit.

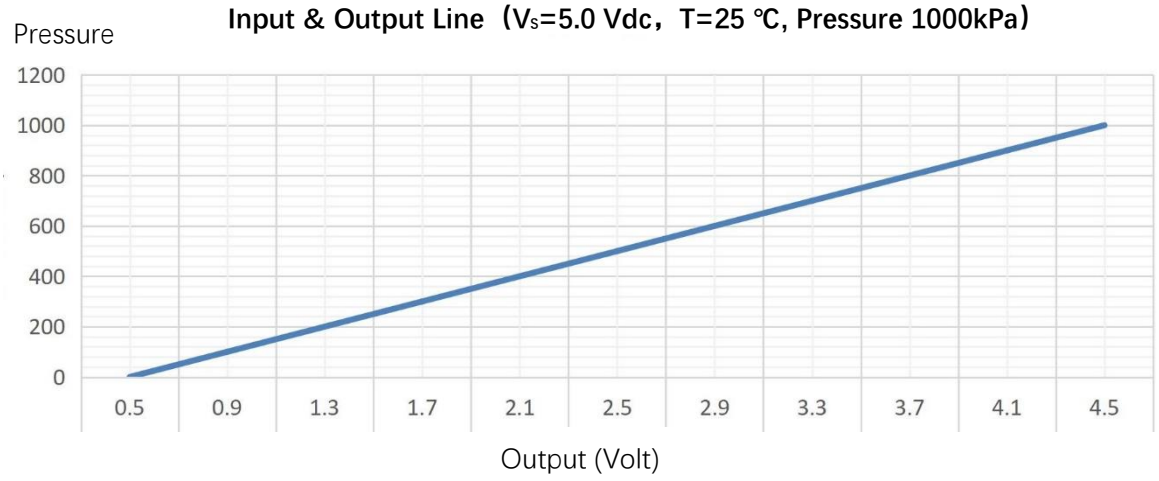
Dimensions (mm)



Electrical Connections

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





Order Guide

GP-310	Pressure Sensor					
	Code1	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			
		Code2	Pressure type			
		G	Gauge			
		S	Sealed Gauge			
			Code3	Calibration		
			1	Calibrated		
			2	No temp. compensation (calibration at room temp.)		
			3	Not calibrated, not compensated (electrical test only)		
				Code3	Connecter	
				1	Tinned pads	
				2	50mm wires	
Example: **GP-310-010-G-1-2**						