

# OEM Piezoresistive Pressure Sensor

Model: PT124G-3100 (High Stable )



## Description

PT124G-3100 high stable OEM sensor is the piezoresistive pressure sensor designed with isolated construction and precise compensation. It uses high stable silicon die. Stainless steel 316L housing with diameter  $\Phi 19\text{mm}$ .

Widely temperature compensation and zero correction are calibrated by laser trimming technics. The measured pressure is transmitted onto silicon die through 316L diaphragm and inner media, to transform the pressure to electric signal.

PT124G-3100 pressure sensor is inspected and screened on automatic production line, testing and checking time after time strictly. It is widely used for various pressure measurement fields.

## Features

- Pressure range 0kPa~7kPa...70MPa
- Gauge, absolute, sealed gauge
- Constant current / Constant Voltage power supply
- Isolated construction, enable to measure various media
- $\Phi 19\text{mm}$  standard OEM pressure sensor
- Full stainless steel 316L
- Wide temperature compensation  $-10^{\circ}\text{C} \sim 80^{\circ}\text{C}$
- Long-term stability  $\pm 0.1\% \text{FS/year}$



## Application

- Industrial process control
- Level measurement
- Gas, liquid pressure measurement
- Pressure checking meter
- Pressure calibrator
- Liquid pressure system and switch
- Cooling equipment and air conditioning system
- Aviation and navigation inspection

## Electric Performance

Power supply:  $\leq 2.0\text{mA DC}$ ;  $\leq 10\text{V DC}$

Electric connection:  $\phi 0.5\text{mm}$  Kovar pin or 100mm silicon rubber flexible wires

Common mode voltage output: 50% input (typ.)

Input impedance:  $3\text{k}\Omega \sim 8\text{k}\Omega$

Output impedance:  $3.5\text{k}\Omega \sim 6\text{k}\Omega$

Response (10%~90%):  $< 1\text{ms}$

Insulation resistor:  $100\text{M}\Omega$ , 100VDC

Overpressure: 1.5 times FS

**Construction Performance**

Diaphragm: stainless steel 316L  
 Housing: stainless steel 316L  
 Pin: Kovar  
 O-ring: Viton  
 Net weight: ~16g

**Environment Condition**

Position: deviate 90° from any direction, zero change  $\leq \pm 0.05\%FS$   
 Shock: no change at 10gRMS, (20~2000) Hz  
 Impact: 100g, 11ms  
 Media compatibility: the gas or liquid which is compatible with stainless steel and Viton

**Basic Condition**

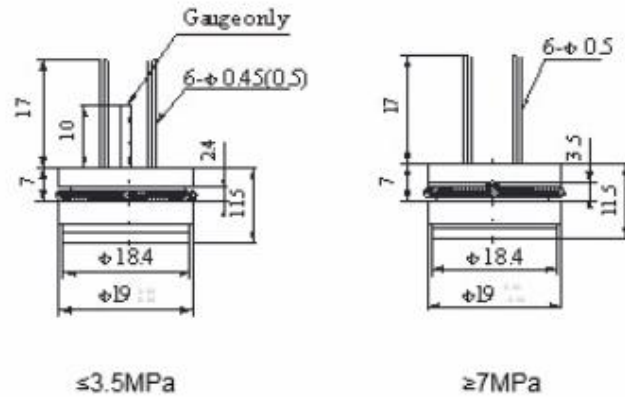
Media temperature: (35±1)°C  
 Environment temperature: (35±1)°C  
 Shock: 0.1g(1m/s<sup>2</sup>)Max  
 Humidity: (50%±10%)RH  
 Local air pressure: (86~106)kPa  
 Power supply: (1.5±0.0015)mADC

**Basic Specification:**

Item (1)	Min.	Typ.	Max.	Units
Linearity		±0.2	±0.25	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
Hysteresis		±0.05	±0.075	%FS
Zero output			±2	mV DC
FS output (2)	70			mV DC
Zero thermal error (3)		±0.75	±1.0	%FS,@35°C
Span thermal error		±0.75	±1.0	%FS,@35°C
Compensated temp. range	-10~80 0~70 (7kPa,20 kPa,35 kPa)			°C
Working temp. range	-40~125			°C
Storage temp. range	-40~125			°C
Stability error		±0.1	±0.2	%FS/year
(1) Testing at basic condition				
(2) For range code 0C, FS output ≥45mV				
(3) For rang code 0C, Zero thermal errors≤1.5%FS				

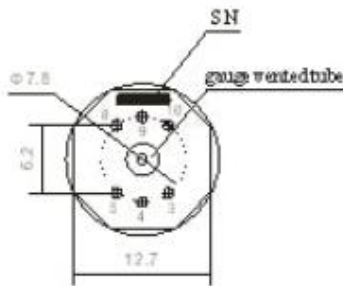
## Dimensions

Outline Construction:(unit:mm)



The suggested installation dimension is  $\Phi 19^{+0.05}_{-0.02}$  mm

## Electric Connection:



Pin	Electric connection	Wire color
4	+OUT	Red
5	-IN	Yellow
8	+IN	Black
9	-OUT	Blue

The Piezoresistive Pressure Sensor is the core parts for various pressure transmitters.



## Order Guide:

PT124G-3100 High Stable Piezoresistive Pressure Sensor						
	Range code	Pressure range	Ref.	Range code	Pressure range	Ref.
	0C	0kPa~7kPa	G	10	0kPa~1000kPa	G.A
	0B	0kPa~20kPa	G	12	0MPa~2MPa	G.A
	0A	0kPa~35kPa	G.A	13	0MPa~3.5MPa	G.A.S
	02	0kPa~70kPa	G.A	14	0MPa~7MPa	S
	03	0kPa~100kPa	G.A	15	0MPa~10MPa	S
	07	0kPa~200kPa	G.A	17	0MPa~20MPa	S
	08	0kPa~350kPa	G.A	18	0MPa~35MPa	S
	09	0kPa~700kPa	G.A	19	0MPa~70MPa	S
		Code	Pressure type			
		G	Gauge			
		A	Absolute			
		S	Sealed gauge			
			Code	Pressure connection		
			0	O-ring		
			Code	Compensation		
			L	Laser trimming		
			M	Outer compensated resistor (providing resistor value)		
			Code	Electric connection		
			1	Kovar pin(default)		
			2*	100mm silicon rubber		
				Code	Special	
				Y	Gauge sensor	

For Example: PT124G-3100 07 G 0 L 1 Y

## Order Notes:

- 1.It is recommended that the sensor should be installed as Suspended Mode to avoid face type seal and avoid affecting sensor stability.
- 2.Please pay attention to protect the diaphragm and the compensated board to prevent any damage or bad performance.
- 3.Temperature resistant range of standard Viton O-ring of sensor is -20°C~250°C. When working temperature is lower than -20°C, or sensor is applied in critical environment, please contact us.

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