

PC8 Piezoresistive Silicon Pressure Sensor

Features

- With constant current and constant voltage excitation options
- Highly reliable imported pressure die
- Wide temperature compensation
- Normalized output available
- The compensating board with glue for moisture-proof protection
- Φ15mm standard OEM
- All 316L material
- High performance, all-solid-state, high reliability
- 18 months warranty period

Applications

- Process control systems
- Pressure calibration instruments
- Refrigeration equipment and HVAC control
- Hydraulic systems and valves
- Level measurement
- Biomedical instruments
- Ships and navigation
- Aircraft and avionics systems
- Weaponry

Notes:

- 1 Do not touch the diaphragm with hard objects, which may cause damage to the diaphragm.
- 2 Please read the Instruction Manual of the product carefully before installation and check the relevant information of the product.
- 3 Strictly follow the wiring method for wiring, otherwise, it may cause product damage or other potential faults.
- 4 Misuse of the product may cause danger or personal injury.



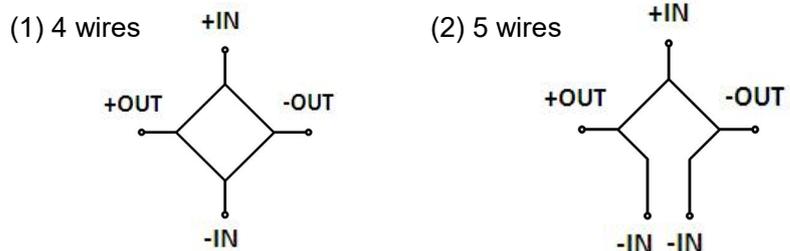
Product overview

The PC8 piezoresistive silicon pressure sensor is the core component for manufacturing pressure sensors and pressure transmitters. As a high-performance pressure sensitive component, it can easily amplify signals and be assembled into pressure transmitters with standard signal output.

PC8 seals diffused silicon pressure sensitive die to 316L stainless steel housing. External pressure is transmitted to the pressure sensitive die through the 316L stainless steel diaphragm and internally sealed silicon oil. Pressure sensitive die does not directly contact the measured medium, forming an all-solid structure of pressure measurement. This allows the product to be applied to a variety of occasions, including harsh corrosive medium environments.

PC8 uses the O-ring for pressure sealing, making installation easy. Our company can also undertake special customizations to meet users' requirements, such as pressure sensors with a fully-welded structure, wide temperature compensation, high reliability, shock resistance, and vibration resistance, especially suitable for supporting national defense weapons and equipment.

Equivalent circuit



Notes:

- 1 Do not misuse documentation.
- 2 The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- 3 Complete installation, operation, and maintenance information is provided in the instructions of the product.
- 4 Misuse of the product may cause danger or personal injury.

Electrical performance parameters

Pressure range	1.6MPa...60MPa
Pressure reference	Absolute pressure, Sealed gauge pressure
Excitation	1.5mA recommended for constant current 10V recommended for constant voltage
Input impedance	Constant current: 2kΩ~5kΩ Constant voltage: 3kΩ~18kΩ
Electrical connection	Gold-plated KOVAR pins or silicon soft wires
Compensation temp.	-10°C~70°C
Operating temp.	-40°C~125°C
Storage temp.	-40°C~125°C
Insulation resistance	≥200MΩ/250VDC
Response time	≤1ms (up to 90%FS)
Measured medium	All the liquids and gases compatible with 316L.
Mechanical vibration	20g (20~5000Hz)
Shock	100g (10ms)
Durability	1×10 ⁶ (cycles)

Structural performance parameters

Diaphragm material	316L
Housing material	316L
Oil filling	Silicon oil
Sealing ring	Fluorine rubber

Basic parameters

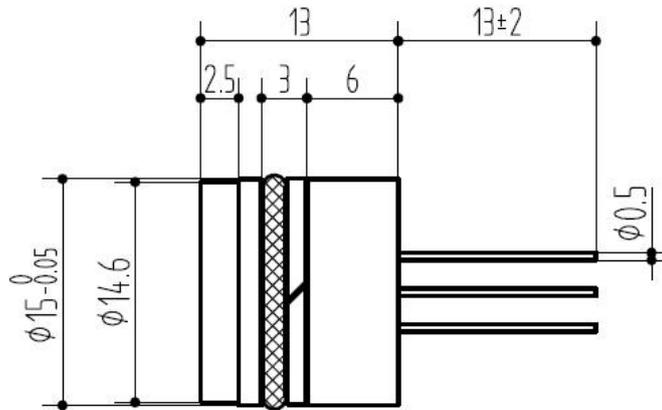
Item	Condition	Min	Nominal	Max	Unit	Note
Nonlinearity		-0.3	±0.2	0.3	%FS	Note(1)
Hysteresis		-0.05	±0.03	0.05	%FS	
Repeatability		-0.05	±0.03	0.05	%FS	
Output signal under zero pressure		-2	±1	2	mV	
Output signal under full-scale span pressure	1.5mA 10V	60 98	90 100	150 102	mV	
Temp.effect on offset		-1.5	±0.75	1.5	%FS	Note(2)
Sensitivity temp. drift		-1.5	±0.75	1.5	%FS	Note(2)
Thermal hysteresis		-0.075	±0.05	0.075	%FS	Note(3)
Long-term stability		-0.3	±0.2	0.3	%FS/Year	

Notes: (1) Calculate according to BFSL method. The negative pressure range is calculated in segments.

(2) In the compensation temperature range, refer to 30°C for -10°C~70°C.

(3) After measuring pressure under the high and low temperatures, return to the room temperature.

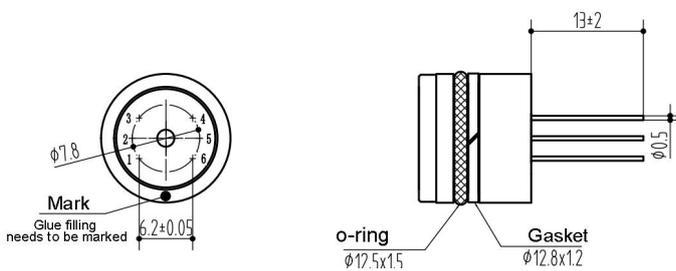
Structure & dimension (in mm)



Electrical connection (in mm)

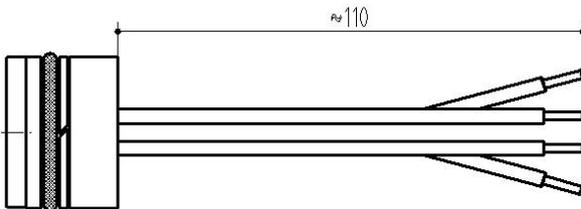
1. Constant current: 6 pins (6p)

Constant voltage: Please confirm specifications with the technical team.



Pin	Definition
3	Excitation+(IN+)
5	Excitation-(IN-)
2	Output+(OUT+)
4	Output-(OUT-)
1	Die-
6	Die-

2. 4 wires (4w)



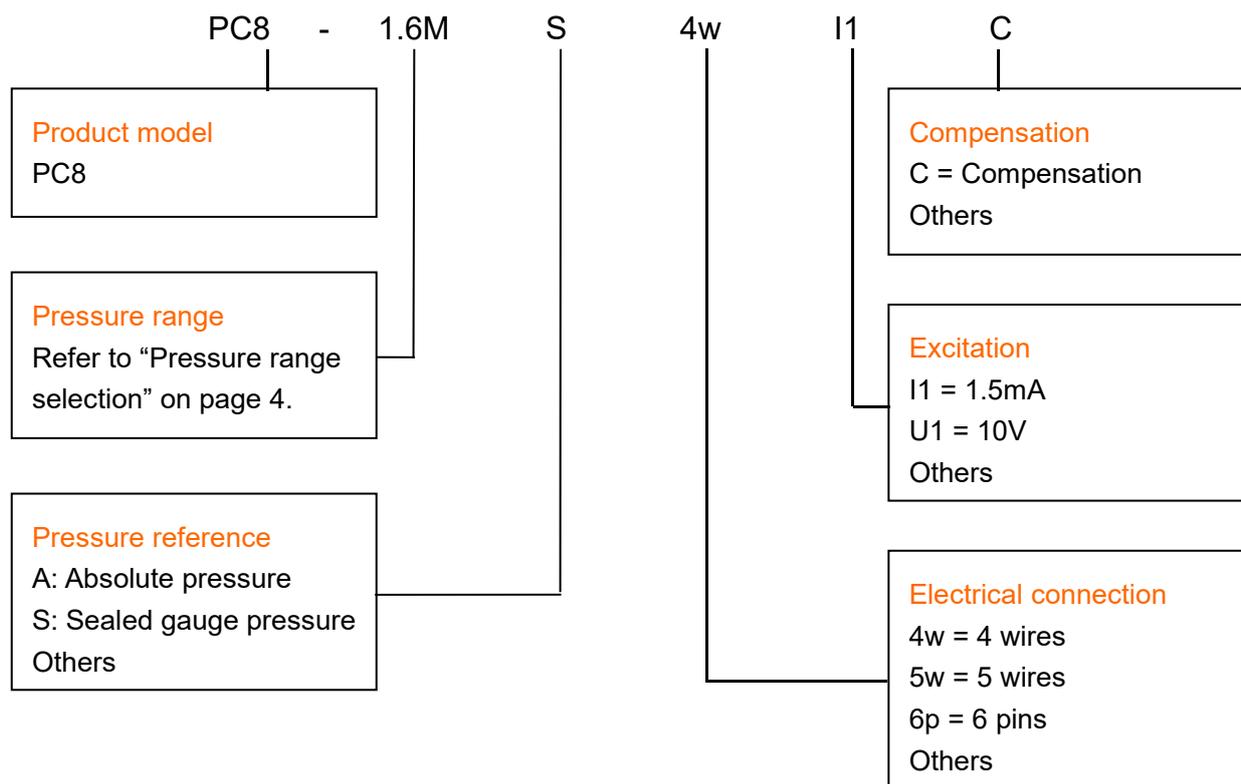
Wire color	Definition
Red	Excitation+(IN+)
Blue	Excitation-(IN-)
Yellow	Output+(OUT+)
White	Output-(OUT-)

Pressure range selection

Code	Pressure reference	Pressure range	Overload pressure	Burst pressure	O-ring
1.6M	A, S	0~1.6MPa	200%FS	500%FS	Fluorine rubber
2.5M	A, S	0~2.5MPa	200%FS	500%FS	Fluorine rubber
4M	S	0~4MPa	200%FS	400%FS	Fluorine rubber
6M	S	0~6MPa	200%FS	400%FS	Fluorine rubber
10M	S	0~10MPa	200%FS	400%FS	Fluorine rubber
16M	S	0~16MPa	150%FS	300%FS	Fluorine rubber
25M	S	0~25MPa	150%FS	300%FS	Fluorine rubber
40M	S	0~40MPa	150%FS	200%FS	Fluorine rubber
60M	S	0~60MPa	150%FS	200%FS	Fluorine rubber

Note: A: Absolute pressure, S: Sealed gauge pressure

How to order



Example: PC8-1.6MS4wI1C

Product model PC8, pressure range 0~1.6MPa, sealed gauge pressure, electrical connection 4 wires, 1.5mA excitation, constant current compensation.

Ordering tips:

- 1 Pressure range can be selected higher or lower than actual conditions but should be within $\pm 30\%$ FS.
- 2 Pressure reference consists of gauge pressure, absolute pressure, and sealed gauge pressure.
As for sealed gauge pressure, PC8 uses the absolute pressure die for the gauge pressure product based on the atmospheric pressure of the production site. For pressure ranges above 4MPa, gauge pressure cannot be selected, but only sealed gauge pressure.
- 3 Confirm the maximum overload of the applied system, which should be less than the overload protection limit of the sensor; otherwise, it will affect the product's durability or even damage the product.
- 4 The commonly used compensation of the product is 1.5mA constant current compensation. Suggest selecting this option with priority.
- 5 For special requirements on performance parameters and functions of the product, please contact us.

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Contact us

Nanjing Wotian Technology Co.,Ltd.

Website: www.wtsensor.com

Add: 5 Wenyong Road, Binjiang Development Zone, Nanjing, 211161, China

E-mail: dr@wtsensor.com