

PC7 Piezoresistive Silicon Pressure Sensor

Features

- High reliability imported pressure chip
- High nonlinearity and good stability
- Small size, package size $\varphi 10 \times 8\text{mm}$
- Wide range, 1MPa to 40MPa
- 316L stainless steel material
- O-ring seal



Applications

- Pressure controller products
- Process control system
- Instrumentation industry
- Hydraulic systems and valves
- Biomedical instruments
- Shipping and navigation

Product overview

The PC7 piezoresistive silicon pressure sensor is a pressure sensor with a small diameter, high performance, high reliability, and a wide range. It utilizes an imported pressure chip, supports both constant-current and constant-voltage excitation modes, and delivers a standard millivolt signal output.

PC7 seals the diffused silicon pressure sensitive die in a $\varphi 10 \times 8\text{mm}$ 316L stainless steel housing, with the electrical connections led out via Kovar pins. External pressure is transmitted to the pressure die through the 316L stainless steel diaphragm and internally sealed silicon oil. The 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.

Our company can also undertake special customizations to meet users' requirements, such as pressure sensors with a pressure port and an externally mounted compensation board.

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.

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.

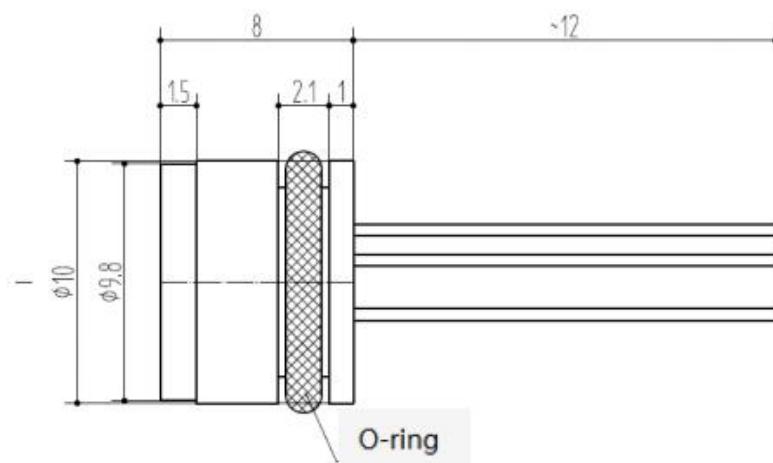
Performance parameters

Pressure range	1MPa~40MPa
Pressure reference	Absolute pressure, Sealed gauge pressure
Excitation	1.5mA recommended for constant current 5V recommended for constant voltage
Operating temp.	-40°C~125°C
Storage temp.	-40°C~125°C
Output signal under zero pressure	±30mV
Output signal under full-scale span pressure	≥60mV
Temp.effect on offset	10%FS
Sensitivity temp. drift	10%FS
Impedance	(2~6)kΩ
Insulation resistance	≥200MΩ/250VDC
Long-term drift	≤0.2%FS/year
Nonlinearity	≤0.25%FS (BFSL)
Repeatability	≤0.05%FS
Electrical connection	Pin

Structural performance parameters

Diaphragm material	316L
Housing material	316L
Oil filling	Silicon oil
Sealing ring	NBR or fluorine rubber

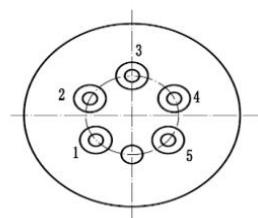
Structure & dimension (in mm)



Electrical connection (in mm)

Constant current: 5-pin

Constant voltage: Please confirm specifications with the technical team.



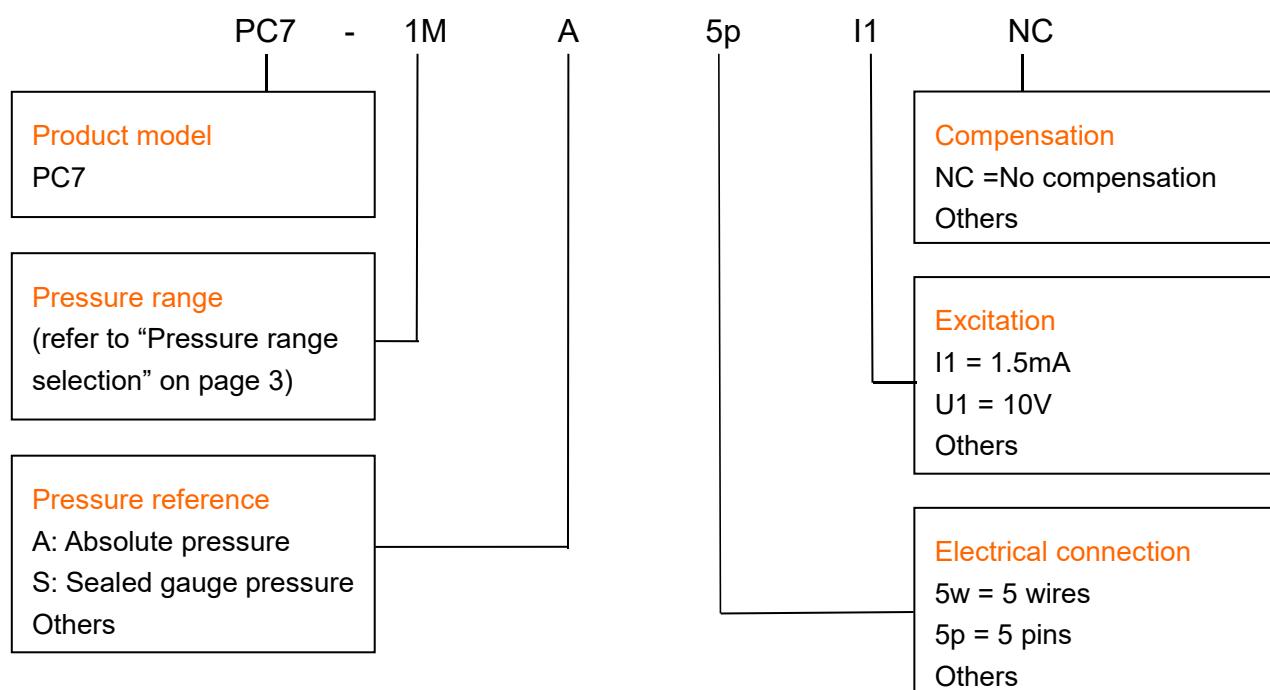
Pin	Definition
1,5	Excitation-(IN-)
2	Output+(OUT+)
3	Excitation+(IN+)
4	Output-(OUT-)

Pressure range selection

Code	Pressure reference	Pressure range	Overpressure	O-ring
1M	A, S	0~1MPa	200%FS	NBR
1.6M	A, S	0~1.6MPa	200%FS	NBR
2.5M	A, S	0~2.5MPa	200%FS	NBR
4M	A, S	0~4MPa	200%FS	NBR
6M	A, S	0~6MPa	150%FS	NBR
10M	A, S	0~10MPa	150%FS	NBR
16M	S	0~16MPa	150%FS	NBR
25M	S	0~25MPa	150%FS	NBR
40M	S	0~40MPa	150%FS	NBR

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

How to order





Example: PC7-1MA5pI1NC

Product model: PC7, pressure range: 0~1MPa, absolute pressure, electrical connection: 5-pin, 1.5mA excitation, No compensation. Default 0.5mm retaining ring.

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.
 - (1) Gauge pressure is measured with the current atmospheric pressure, generally higher than it. Negative pressure is a special case of gauge pressure, referring to the working condition where the pressure of the work site is below the current atmospheric pressure.
 - (2) Absolute pressure is based on a vacuum.
 - (3) As for sealed gauge pressure, PC7 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 product typically uses a 1.5mA constant current compensation, which is recommended as the primary choice.
- 5 The materials and processes for manufacturing negative pressure sensors are different from those of positive pressure, so the negative pressure sensors cannot be replaced by gauge pressure sensors.
- 6 For special requirements on performance parameters and functions of the product, please contact us.

Wotian reserves the right to make any change in this publication without notice. The information provided is believed to be accurate and reliable as of this product sheet.

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