PC10AU Gold-Plated Pressure Sensor

Features

- Wide temperature compensation
- Φ19mm standard OEM
- All 316L material
- Prevent hydrogen permeability
- High performance, all-solid-state, high reliability
- 18 months warranty period

Applications

- Process control systems
- Hydraulic systems and valves
- Hydrogen measurement
- Ships and navigation
- Aircraft and avionics system
- Hydrogen vehicle

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.

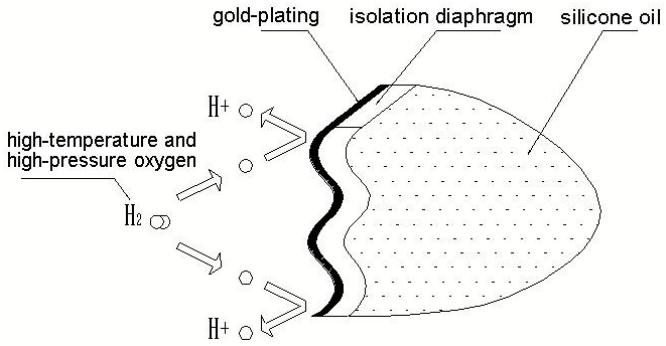
Product overview

The PC10AU gold-plated pressure sensor is the core component of pressure sensors and pressure transmitters for measuring the hydrogen environment. It can easily amplify signals and be assembled into pressure transmitters with standard signal output. It is protected from hydrogen penetration by diaphragm gold-plating.

Our company can also undertake special customization based on users' needs, such as pressure sensors with a fully-welded structure, wide temperature compensation, and highly reliable, especially suitable for defense weapons equipment.

Hydrogen penetration solution

Plating the base metal with a thin layer of gold protects the diaphragm from hydrogen penetration. The 99.9% pure gold coating (thickness 3um) can eliminate hydrogen permeation without affecting the performance of the product itself.



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	100kPa~40MPa
Pressure reference	Gauge pressure, 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.	Constant current: ≤70kPa 0℃~60℃; -10℃~70℃(other ranges);
	Constant voltage: -20℃~85℃
Operating temp.	-40℃~120℃
Storage temp.	-40℃~125℃
Insulation resistance	≥200MΩ/250VDC
Response time	≤1ms (up to 90%FS)
Measured medium	Hydrogen
Mechanical vibration	20g (20~5000Hz)
Shock	100g (10ms)
Durability	1×10^6 (cycles)

Structural performance parameters	
Diaphragm material	316L (gold plating)
Housing material	316L
Oil filling	Silicon oil
Sealing mode	Welded

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	
Zero temp. coefficient		-1.5	±0.75	1.5	%FS	Note(2)
Span temp. coefficient		-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	

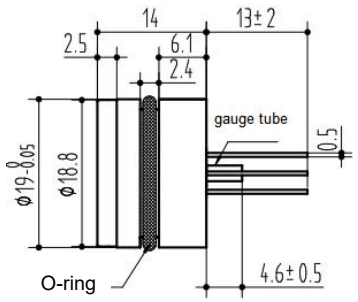
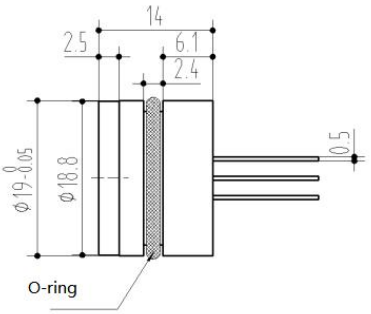
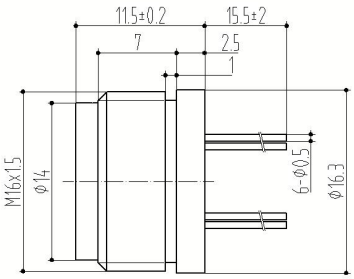
Note: (1) Calculate according to the BFSL least square method.

(2) In the compensation temperature range, refer to 30℃ for 0℃~60℃ and -10℃~70℃.

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

Structure and dimensions

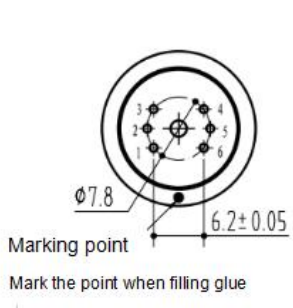
In mm

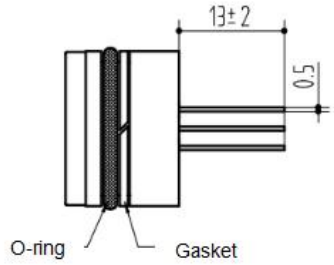
PC10AU Gauge pressure 0.1MPa~4MPa	PC10AU Sealed gauge pressure 1MPa~16MPa	PC30AU Sealed gauge pressure ≥16MPa
		

Electrical connection

In mm

6 pins (6p)





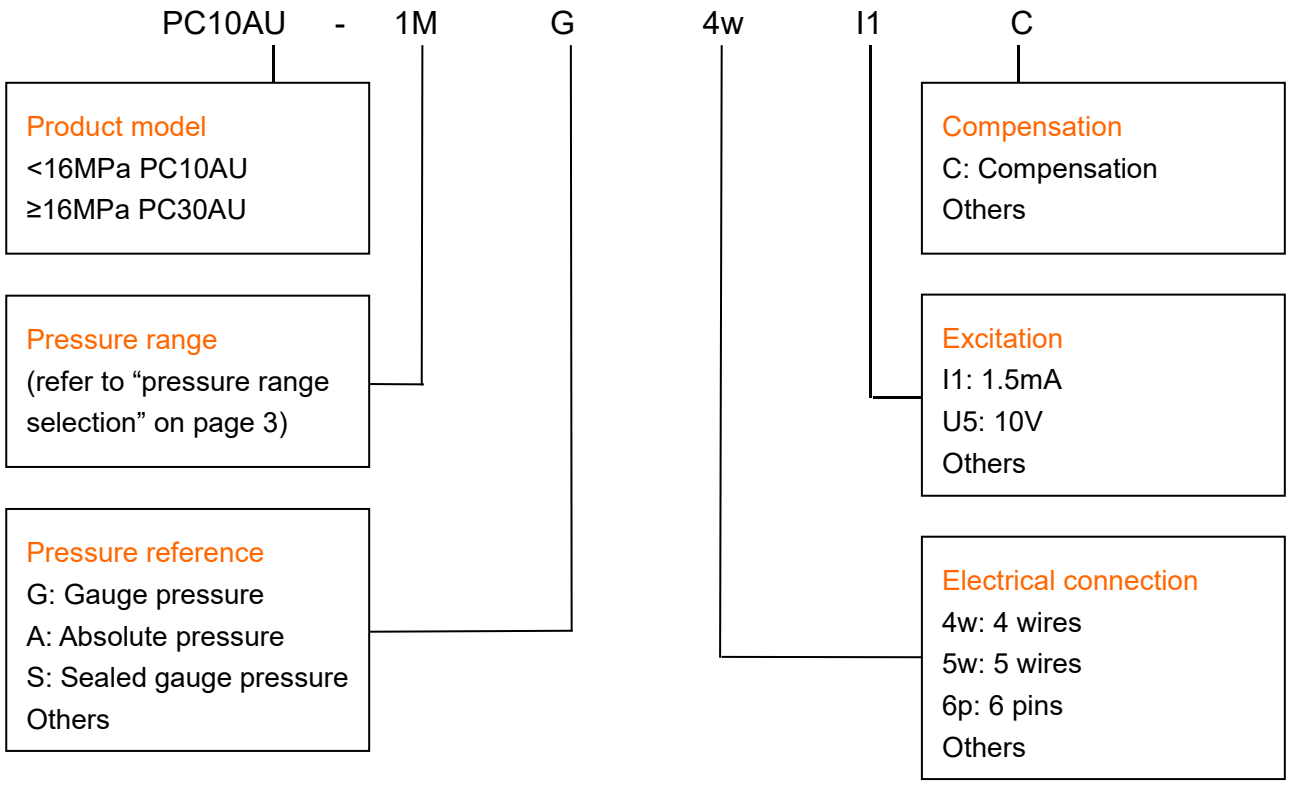
Pin	Definition
3	Excitation+(IN+)
5	Excitation-(IN-)
2	Output+(OUT+)
4	Output-(OUT-)
1	Die-
6	Die-

Pressure range selection

Code	Pressure reference	Pressure range	Overload pressure	Burst pressure
100k	G	0~100kPa	200%FS	500%FS
1M	G, S	0~1MPa	200%FS	500%FS
2.5M	G, S	0~2.5MPa	200%FS	500%FS
4M	G, S	0~4MPa	200%FS	500%FS
10M	S	0~10MPa	200%FS	400%FS
16M	S	0~16MPa	200%FS	400%FS
25M	S	0~25MPa	150%FS	400%FS
40M	S	0~40MPa	150%FS	400%FS

Note: G: Gauge pressure, A: Absolute pressure, S: Sealed gauge pressure
Please contact us if you need absolute pressure.

How to order



Example: PC10AU-1MG4wI1C

The product model: PC10AU, pressure range 0~1MPa, gauge pressure, electrical connection 4 wires, 1.5mA excitation, current compensation.

Ordering tips:

1 Pressure range can be selected higher or lower than actual conditions but should be within ±30%FS.

2 Pressure reference consists of gauge pressure, absolute pressure, and sealed gauge pressure.

(1) Gauge pressure refers to a measurement based on the current atmospheric pressure, generally greater than the current atmospheric pressure. Negative pressure is a special case of gauge pressure, referring to the working conditions at the workplace that are lower than the current atmospheric pressure.

(2) Absolute pressure is based on a vacuum.

(3) As for sealed gauge pressure, PC10AU uses the absolute pressure die for the gauge pressure product based on the atmospheric pressure of the production site. There is no gauge pressure above 6MPa, 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.

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.

Contact us

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