

PC10D Differential Pressure Sensor

Features

- Constant current excitation
- High reliability imported pressure chip
- Wide temperature compensation
- High static pressure resistance
- All 316L stainless steel material
- Small volume
- High performance, all solid, high reliability
- 18 months warranty period

Applications

- Differential pressure detection
- Pressure calibrator
- Venturi and pipeline flowmeter
- Hydraulic system switch
- liquid level measurement
- Industrial process control
- Gas and fluid pressure measurement

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.



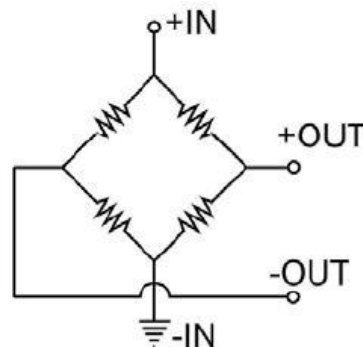
Product overview

PC10D piezoresistive silicon differential pressure sensor is the core component of pressure sensor and pressure transmitter as the high performance pressure sensitive element. It adopts integrated structure, high static pressure resistance, stable and reliable.

PC10D piezoresistive silicon differential pressure sensor encapsulates the diffused silicon pressure-sensitive chip into the 316L stainless steel shell, and the external pressure is transferred to the sensitive chip through the stainless steel diaphragm and the silicone oil sealed inside. The sensitive chip does not directly contact with the measured medium, forming an all-solid structure for pressure measurement and realizing the accurate measurement of differential pressure. Therefore, the product can be used in a variety of differential pressure measurements, including harsh corrosive media environments.

PC10D piezoresistive silicon differential pressure sensor adopts "O" ring for pressure seal, easy to install, its shape and assembly size are consistent with foreign general products, has good interchangeability.

Equivalent circuit



Electrical performance parameters

Pressure range	0~10kPa…2.5MPa
Pressure reference	Differential pressure
Excitation	Constant current, ≤2mA
Input impedance	3KΩ ~6KΩ
Electrical connection	Silicon soft wire
Compensation temp.	-10℃~70℃
Operating temp.	-40℃~125℃
Storage temp.	-40℃~125℃
Insulation resistance	≥200MΩ/250VDC
Response time	≤1ms (up to 90%FS)
Measured medium	All liquids and gases compatible with stainless steel and fluorine rubber
Mechanical vibration	20g (20~5000Hz)
Shock	100g/10ms
Durability	10 ⁶ pressure cycles

Structural performance parameters

Diaphragm material	316L
Housing material	316L
Oil filling	Silicon oil
Sealing O-ring	NBR O-ring or fluororubber O-ring

Note: the temperature endurance range of NBR O-ring is -40℃~120℃. the temperature endurance range of fluororubber O-ring is -20℃~150℃. When the operating temperature of the sensitive element exceeds the above temperature range or the sensitive element is used in harsh media, please contact our company.

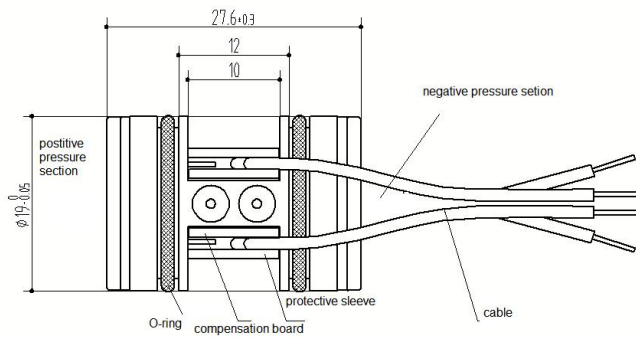
Basic parameters

Item	Condition	Min	Nominal	Max	Unit	Note
Non-linearity		±0.1	±0.2	±0.3	%FS	Note(1)
Hysteresis		-0.05	±0.03	0.05	%FS	
Repeatability		0.05	±0.03	0.05	%FS	
Zero output		-2	±1	2	mV	
Span output	1.5mA	55	85	100	mV	
Zero temp. coefficient	-10~70℃ compensation		1.2	1.5	%FS	Note(2)
Span temp. coefficient	-10~70℃ compensation		1.2	1.5	%FS	Note(2)
Thermal hysteresis		-0.075	±0.05	0.075	%FS	Note(3)
Long term stability			±0.2	±0.3	%FS/Year	

Note:

- (1) Calculate according to BFSL least square method.
- (2) In the compensation temperature range, 0℃~60℃ and -10℃~70℃, reference temperature 30℃.
- (3) After passing high and low temperature, return to the reference temperature.

Structure Dimension and Electrical connection (In mm)



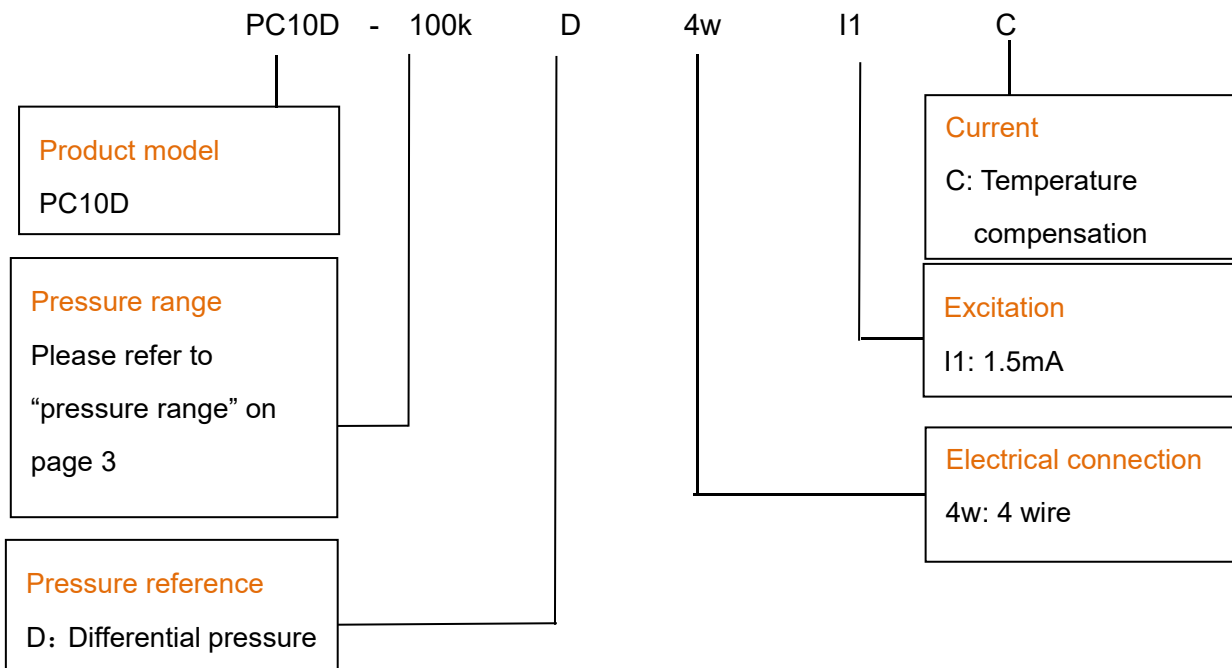
Wire color	Definition
Red	Excitation+(IN+)
Blue	Excitation-(IN-)
Yellow	Output+(OUT+)
White	Output-(OUT-)

Pressure range selection

Code	Pressure reference	Pressure range	Overload pressure	Burst pressure	O-ring
10kD	Differential pressure	0~10kPa	300%FS	600%FS	NBR
20kD	Differential pressure	0~20kPa	300%FS	600%FS	NBR
35kD	Differential pressure	0~35kPa	300%FS	600%FS	NBR
70kD	Differential pressure	0~70kPa	200%FS	600%FS	NBR
100kD	Differential pressure	0~100kPa	200%FS	500%FS	NBR
160kD	Differential pressure	0~160kPa	200%FS	500%FS	NBR
250kD	Differential pressure	0~250kPa	200%FS	500%FS	NBR
400kD	Differential pressure	0~400kPa	200%FS	500%FS	NBR
600kD	Differential pressure	0~0.6MPa	200%FS	500%FS	NBR
1MD	Differential pressure	0~1.0MPa	200%FS	300%FS	NBR
1.6MD	Differential pressure	0~1.6MPa	200%FS	300%FS	NBR
2.5MD	Differential pressure	0~2.5MPa	150%FS	300%FS	NBR

Note: D: differential pressure

How to order





Example: PC10D-100kD4wI1C

The product model is PC10D,100k: pressure range 0~100kPa, D: Differential pressure, 4w: electrical connection 4 wires, I1: 1.5mA excitation, C: current compensation

Note:

1. One end of the sensitive element is the high voltage end, and the other end is the low voltage end. The high and low voltage ends can be identified by the "+" and "-" marks on the sensitive element, and can also be detected by testing.
2. In the process of use, the pressure value of the high pressure end should not be less than the pressure value of the low pressure end.

Ordering tips:

1. Please confirm the range when ordering. In general, 80% of the range is selected according to the actual measuring pressure.
2. The temperature endurance of standard configuration of fluorine rubber sealing ring for differential pressure sensor range from -20°C to 150°C. Please contact us when the operating temperature range is below -20°C, or the sensitive element is used in harsh media.
3. 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

Nanjing Wotian Technology Co.,Ltd.

Website: www.wtsensor.com

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

E-mail: dr@wtsensor.com