

# PC12III Flush Diaphragm Pressure Sensor with thread

## Features

- Anti-contact damage design for diaphragm
- Imported pressure die
- Glue filling moisture-proof protection
- All stainless steel housing material
- High accuracy, high reliability
- Strong anti-interference, good long-term stability
- 12 months warranty period

## Applications

- Glue
- Eco-friendly chemical coatings
- Polyurethane equipment
- Industry standards supporting



## Product overview

The PC12III OEM products adopt a one-time oil filling technology. The diaphragm directly contacts the measuring medium, and the pressure it senses is transmitted to the pressure chip through silicon oil to generate an electrical signal. The compensation circuit will modify the pressure signal to a linear pressure signal.

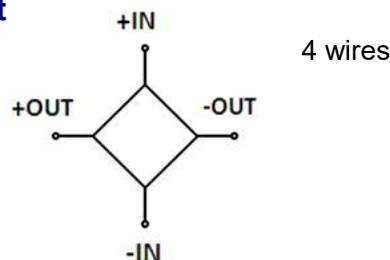
The diaphragm exposed on the threaded end face directly senses pressure. It uses an open corrugated structure and is resistant to touch. The applied pressure is transmitted to the sensitive chip through the stainless steel diaphragm and the sealed internal medium oil. The sensitive chip does not directly contact the measured medium, forming an all-solid structure for pressure measurement, so the product can be used in various occasions, including harsh corrosive medium environments.

Our company can customize products for customers, to make products with a special structure and size. We have a mature mass production line that can complete production tasks in a timely and high-quality manner.

### 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.

## 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	0~35kPa..... 10MPa
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: 5kΩ~18kΩ
Electrical connection	Silicon soft wire
Compensation temp.	0℃~60℃ (≤70kPa); -10℃~70℃ (other ranges)
Operating temp.	-40℃~125℃
Storage temp.	-40℃~125℃
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)
Durability	1×10 <sup>6</sup> (cycles)

Structural performance parameters	
Diaphragm material	316L
Housing material	316L
Liquid filling	Silicon oil

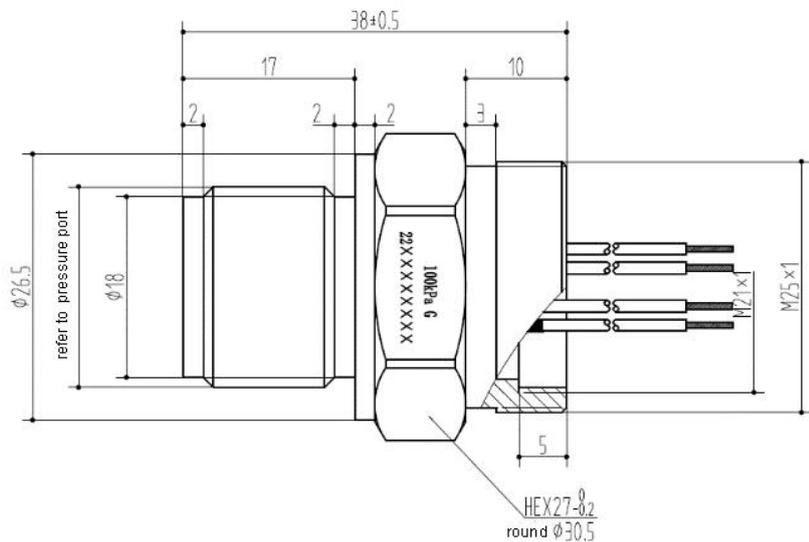
Basic parameters					
Item	Min	Typical	Max	Unit	Note
Nonlinearity	-0.3	±0.25	0.3	%FS	Note(1)
Hysteresis	-0.05	±0.03	0.05	%FS	
Repeatability	-0.05	±0.03	0.05	%FS	
Output signal under zero pressure	-2	±1	2	mV	
Output signal under full-scale span pressure	60	90	150	mV	1.5mA supply
Temp.effect on offset	-1.5	±1.2	1.5	%FS	Note(2)
Sensitivity temp. drift	-1.5	±1.2	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 least square method.

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

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

### Structure & dimension



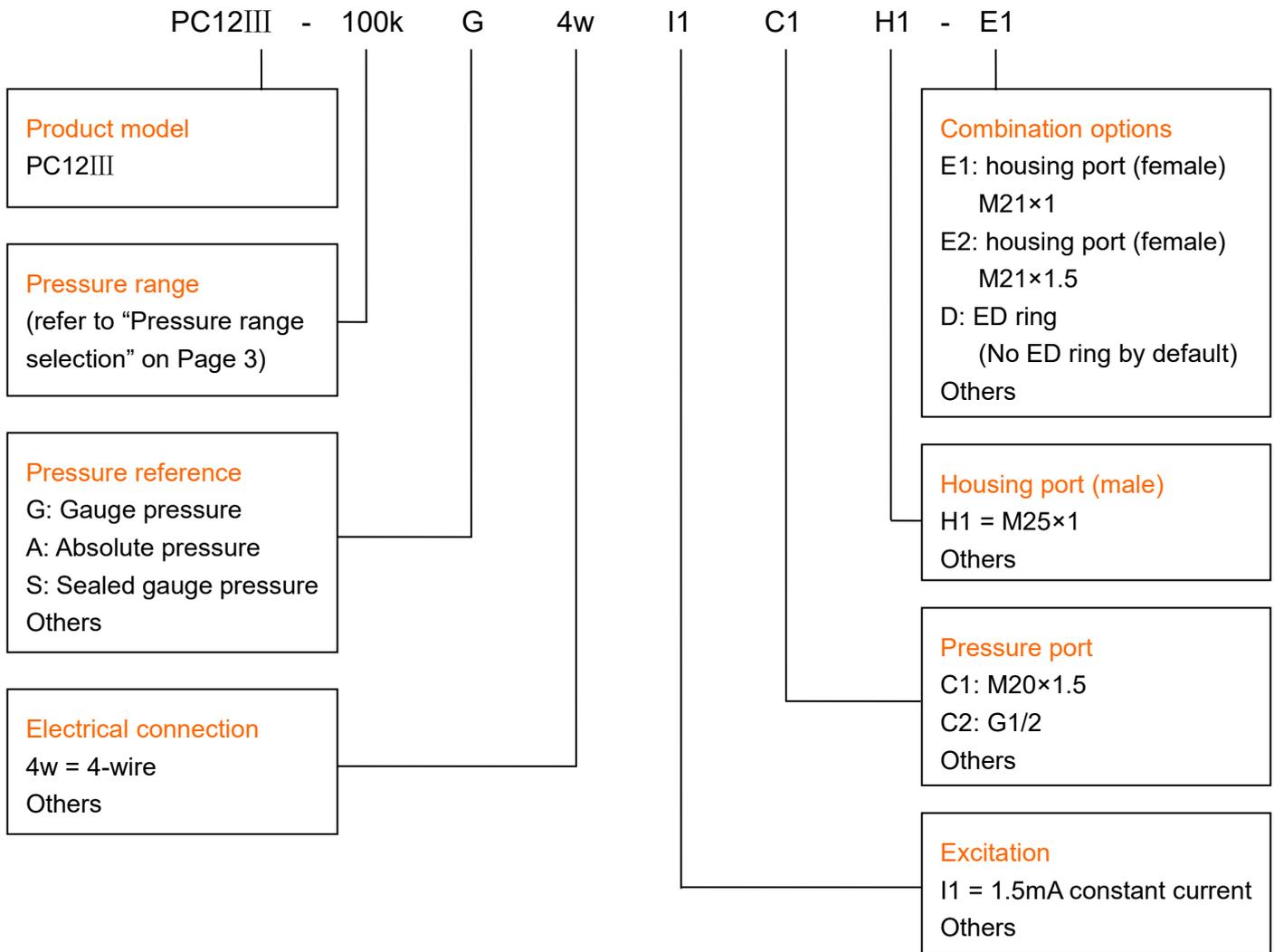
Wire color	Definition
Red	Excitation+(IN+)
Blue	Excitation-(IN-)
Yellow	Output+(OUT+)
White	Output-(OUT-)

### Pressure range selection

Code	Pressure reference	Pressure range	Overload pressure	Burst pressure
35k	G	0~35kPa	300%FS	500%FS
100k	G, A	0~100kPa	200%FS	500%FS
250k	G	0~250kPa	200%FS	500%FS
600k	G	0~600kPa	200%FS	500%FS
1M	G	0~1MPa	200%FS	500%FS
1.6M	G, S	0~1.6MPa	200%FS	500%FS
2.5M	G, S	0~2.5MPa	200%FS	500%FS
6M	S	0~6MPa	200%FS	400%FS
10M	S	0~10MPa	200%FS	≤25MPa

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

## How to order



**Exmpl:** PC12III-100kG4wI1C1H1-E1

Product model: PC12III, pressure range: 0~100kPa, pressure reference: gauge pressure, 4-wire lead out, 1.5mA constant current excitation, pressure port: M20×1.5, hosing port (male): M25×1, housing port (female): M21×1.

### Ordering tips

- 1 It can be selected for over range or down range, with amplitude controlled within ± 30% FS.
- 2 The pressure methods include gauge pressure, absolute pressure, and sealed 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 conditions at the workplace that are lower than the current atmospheric pressure.

(2) Absolute pressure is referenced against a vacuum.

(3) Sealed gauge pressure refers to using the absolute pressure as the gauge pressure, and the benchmark is the air pressure at the production site. There is no gauge pressure above 4MPa, only sealed pressure.

3 Confirm the maximum overload of the system. The maximum overload of the system should be less than the overload protection limit of the sensor; otherwise, it may affect the product's durability or even damage the product.

4 The commonly used compensation method for the product is 1.5mA constant current compensation, and it is recommended to choose it first.

5 The materials and processes used to manufacture negative pressure sensors are different from those used to manufacture positive pressure sensors. Negative pressure sensors cannot be replaced by gauge pressure sensors.

6 If there are special requirements for performance parameters and functions of our products, please negotiate with our company.

7 Default selection: with 1mm retaining ring, without ED ring groove.

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](http://www.wtsensor.com)

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

E-mail: [dr@wtsensor.com](mailto:dr@wtsensor.com)