PC12K Flush Diaphragm Pressure Sensor with Clamp

Features

- Flush diaphragm with clamp structure
- High reliability imported pressure chip
- One-time silicon oil filling technology
- Compensation board filled with glue for moisture-proof protection
- All stainless steel housing
- High precision and stability
- Strong anti-interference and good long-term stability
- 18 months warranty

Applications

- Medical, food industry
- Environmental protection chemical coating
- Polyurethane equipment
- Industry standard support

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

PC12K clamp type pressure sensor adopts one-time silicon oil filling technology. The pressure felt by the diaphragm is transmitted to the pressure chip through the silicon oil, and the compensation circuit corrects the pressure signal into a linear electric signal. The clamp face diaphragm is exposed to direct pressure, which can prevent scaling, unhygienic and sticky pressure blockage and other problems. It is widely used in food, pharmaceutical, wine-making and other sanitary industries as well as occasions where the measuring medium may be fouled.

Customization is available for special structure and size of the product. The company has a mature batch production line that can complete production tasks in time with quality.

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~0~10kPa…10MPa
Pressure reference	Gauge pressure, Absolute pressure, Sealed gauge pressure
Excitation	1.5mA recommended for constant current
Input impedance	Constant current: 2kΩ~5kΩ
Electrical connection	Gold-plated KOVAR pin or silicon soft wire
Compensated temp.	Constant current: 0℃~60℃(≤70kPa); -10℃~70℃(Other ranges)
Operating temp.	-40℃~120℃
Storage temp.	-40℃~120℃
Insulation resistance	≥200MΩ/250VDC
Response time	≤1ms(Up to 90%FS)
Measuring medium	All the liquids and gases compatible with 316L.
Mechanical vibration	20g(20~5000HZ)
Shock	100g(10ms)
Service life	10×10^6(cycles)
Structural performance parameters	
Diaphragm material	316L
Clamp material	316L
Pressure port material	304
Filling oil	Silicon oil

Basic parameters

Item	Condition	Min	Nominal	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	
Zero output		-2	±1	2	mV	
Full scale span output	10kPa Other ranges	30 60	90	150	mV	1.5mA excitation
Zero temp. coefficient	10kPa Other ranges	-2 -1.5	±1.5 ±0.75	2 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	

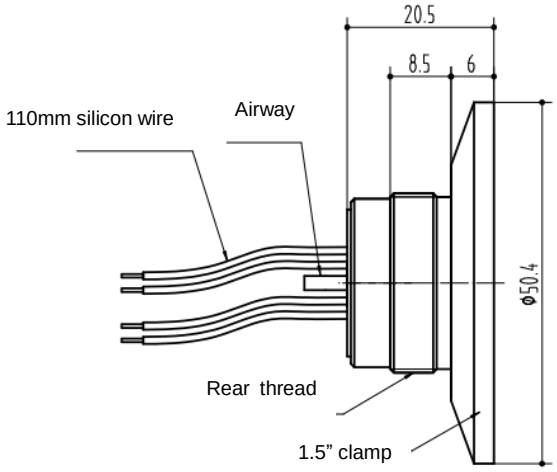
Note:

(1) Calculate according to BFSL least square method.

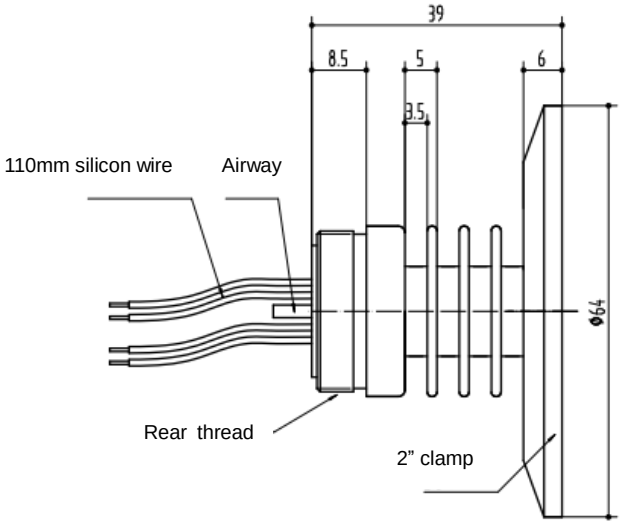
(2) In the compensated temperature range, refer to 30℃ for 0℃~60℃ and -10℃~70℃.

(3) After passing high and low temperature, return to the reference temperature.

Structure and dimensions



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



Cooling fan selection:

Medium temp.: -40℃~85℃ (No cooling fan)
Medium temp.: -40℃~150℃ (3 cooling fans)
Medium temp.: -40℃~220℃ (5 cooling fans)

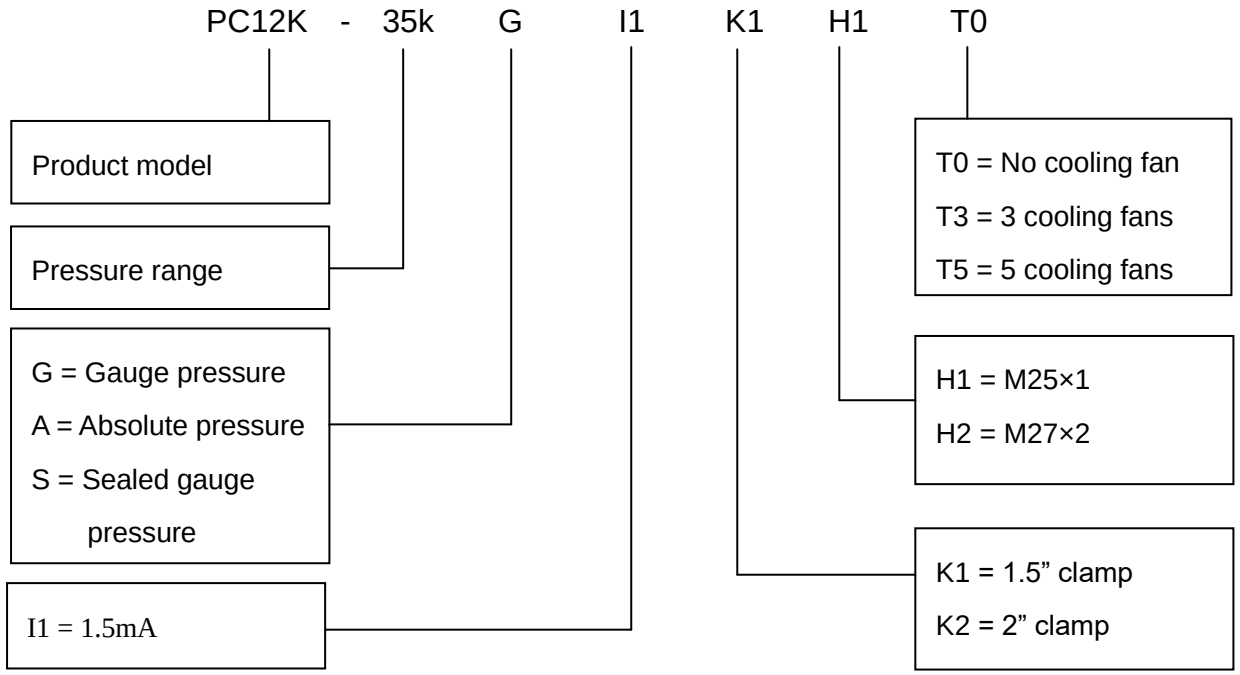
Pressure range selection

Code	Pressure reference	Pressure range	Overpressure	Burst pressure
10k	G	0~10kPa	300%FS	600%FS
20k	G	0~20kPa	300%FS	600%FS
35k	G	0~35kPa	300%FS	600%FS
70k	G	0~70kPa	300%FS	600%FS
100k	G, A	0~100kPa	200%FS	500%FS
160k	G, A	0~160kPa	200%FS	500%FS
250k	G, A	0~250kPa	200%FS	500%FS
400k	G	0~400kPa	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

Pressure range selection (cont.)				
4M	S	0~4MPa	200%FS	400%FS
6M	S	0~6MPa	200%FS	400%FS
10M	S	0~10MPa	200%FS	400%FS
N5k	Omitted	-100~250kPa	750kPa	1.25MPa
N7k	Omitted	-100~600kPa	1.2MPa	3MPa
N8M	Omitted	-0.1~1MPa	2MPa	5MPa
N9M	Omitted	-0.1~1.6MPa	3MPa	9MPa
N10M	Omitted	-0.1~2.5MPa	5MPa	12.5MPa

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

How to order



Example: PC12K-35kGI1K1H1T0

Refer to product model PC12K, with pressure range 35kPa, gauge pressure, 1.5mA constant current excitation, 1.5” clamp, no cooling fan, and rear thread M25×1.

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 is based on the current atmospheric pressure. Generally, it refers to the measurement of pressure which is greater than the current atmospheric pressure. Negative pressure is a special case of gauge pressure. It refers that there is such working condition that the pressure of work site is lower than the current atmospheric pressure.

(2) Absolute pressure is based on vacuum.

(3) As for sealed gauge pressure, PC10 uses absolute pressure die for gauge pressure product based

on the atmospheric pressure of production site. For pressure range above 6MPa, 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 life or even damage the product.

4 The commonly used compensation of the product is 1.5mA constant current compensation. Suggest selecting the option with priority.

5 The material and process for manufacturing negative pressure sensors are different from those of positive pressure sensors. So gauge pressure sensors cannot be used as substitute of negative 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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