PC10Y Dual-Sealed Pressure Sensor

Features

- Constant current excitation and constant voltage excitation
- Highly reliable imported pressure die
- Wide temperature range compensation
- Normalized output is optional
- The compensated board with glue for moisture-proof protection
- Standard Φ19mm, customization for other diameter
- All SS316L material
- High performance, high reliability
- 18 months guarantee

Applications

- Process control systems
- Pressure calibration instruments
- Refrigeration equipment and HVAC control
- Hydraulic systems and valves
- Level measurement
- Biomedical instruments
- Ships and navigation
- Aircraft and avionics systems

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

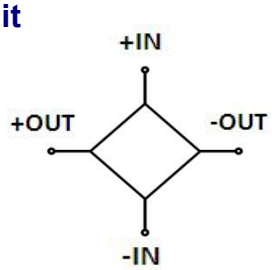
The PC10Y dual-sealed pressure sensor serves as the core component for pressure transmitter fabrication. As a high-performance pressure-sensitive element, it enables signal amplification and can be integrated into transmitters with standard signal output.

The PC10Y encapsulates the diffused silicon pressure-sensitive die inside a 316L stainless steel housing. External pressure is transmitted to the die via the stainless steel diaphragm and internally sealed silicone oil. The sensing die is isolated from the measured medium with an all-solid pressure measurement structure, suitable for various working conditions, including harsh corrosive media environments.

The PC10Y adopts O-ring pressure sealing for easy installation. Our company offers special customization as users' needs, such as pressure sensors with diaphragm sensing structure, wide temperature range compensation, high-reliability, anti-shock and anti-vibration pressure sensors.

Equivalent circuit

4 wires



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	10kPa~100kPa
Pressure reference	Gauge pressure, Absolute pressure
Excitation	1.5mA recommended for constant current; 5V or 10V for constant voltage
Input impedance	2kΩ~5kΩ
Electrical connection	Silicon soft wire
Compensated temp. range	0ºC ~ 60ºC (≤70kPa); -10ºC ~ 70ºC (other ranges)
Operating temp.	-40ºC~ 125ºC
Storage temp.	-40ºC ~ 125ºC
Insulation resistance	≥200MΩ/250VDC
Response time	≤1ms (up to 90%F.S.)
Measured medium	All the liquids and gases which are compatible with 316L.
Mechanical vibration	20g (20~5000Hz)
Shock	100g (10ms)
Service life	1×10^6 (cycles)

Structural performance parameters	
Diaphragm material	SS316L
Housing material	SS316L
Oil filling	Silicon oil
Sealing ring material	NBR or FKM

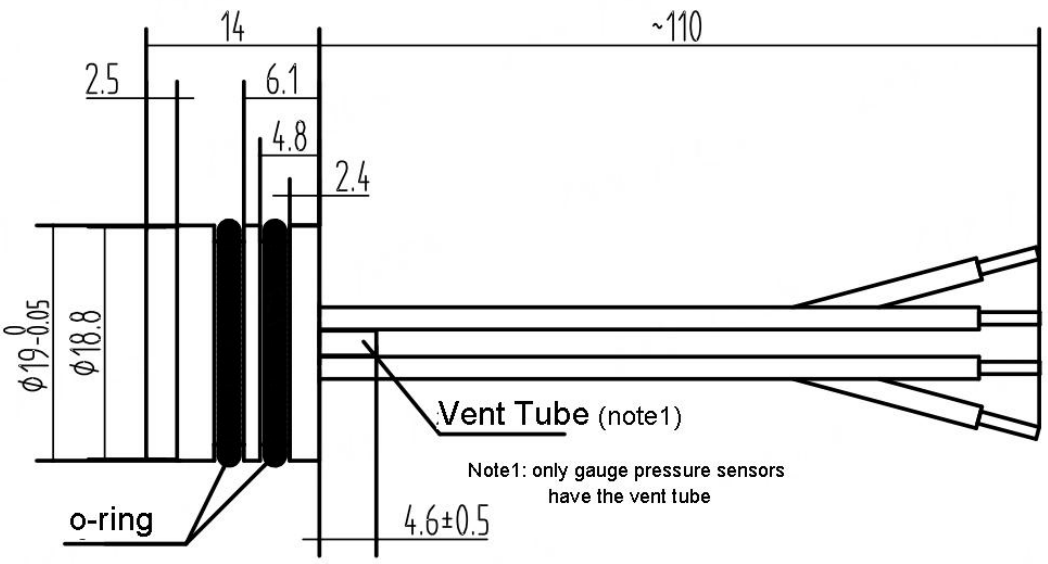
Basic parameters						
Item	**Condition**	**Min**	**Typical**	**Max**	**Unit**	**Note**
Non-linearity		-0.3	±0.2	0.3	%F.S.	Note(1)
Hysteresis		-0.05	±0.03	0.05	%F.S.	
Repeatability		-0.05	±0.03	0.05	%F.S.	
Zero output		-2	±1	2	mV	
Full scale output	1.5mA (10kPa) 1.5mA (other ranges)	30 60	 90	 150	mV	
Zero temp. drift	10kPa other ranges	-2 -1.5	±1.5 ±0.75	2 1.5	%F.S.	Note(2)
Sensitivity temp. drift		-1.5	±0.75	1.5	%F.S.	Note(2)
Thermal hysteresis		-0.075	±0.05	0.075	%F.S.	Note(3)
Long-term stability		-0.3	±0.2	0.3	%F.S./Year	

Notes: (1) Calculate according to the BFSL least square method. Negative pressure range is calculated in segments.

(2) Within the compensated temperature range 0ºC ~ 60ºC(≤70kPa) or -10ºC ~ 70ºC(other ranges), the middle point temperature is 30ºC for reference.

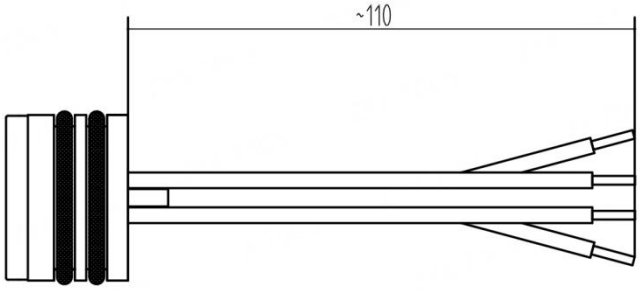
(3)After measuring pressure under the high and low temperatures, return to the reference temperature.

Structure and dimension (in mm)



Electrical connection (in mm)

Wire connection: 4 wires (4w) for constant current excitation and constant voltage excitation



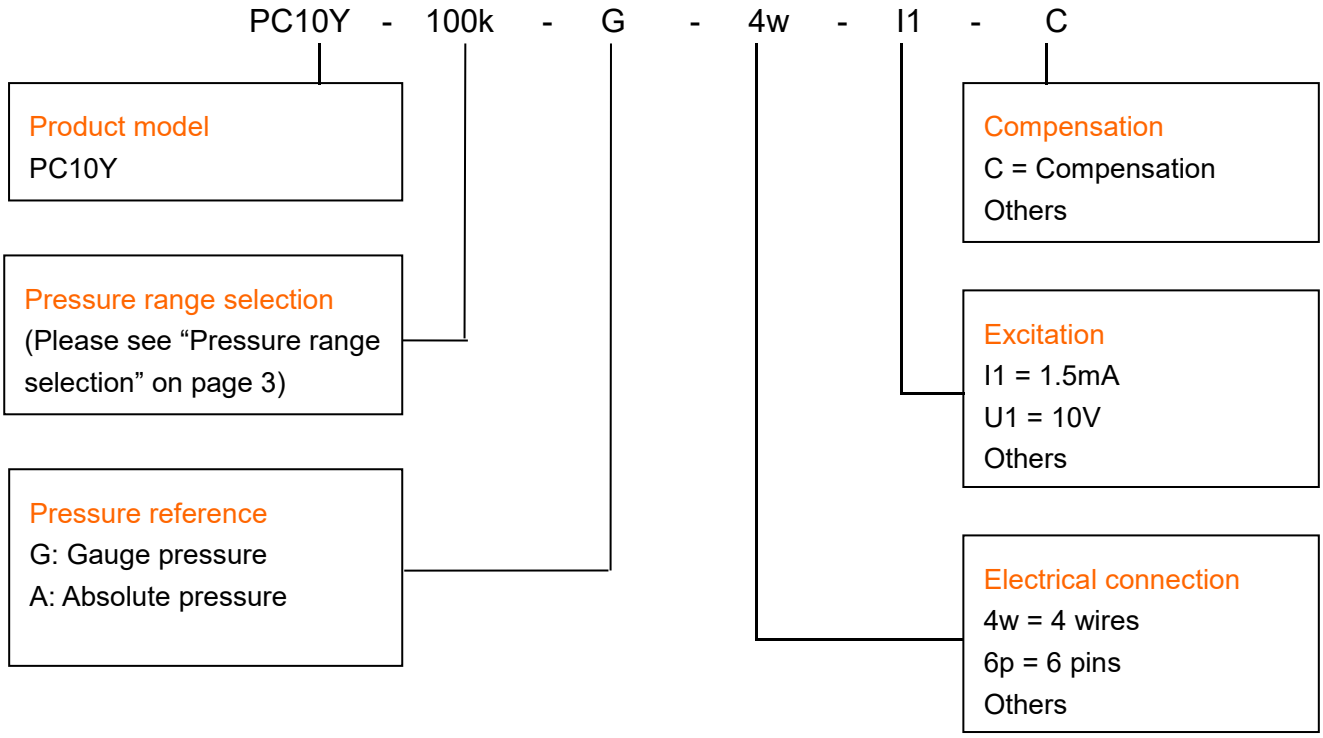
Wire color	Definition
Red	Excitation+(IN+)
Blue	Excitation-(IN-)
Yellow	Output+(OUT+)
White	Output-(OUT-)

Pressure range selection

Code	Pressure reference	Pressure range	Overload pressure	Burst pressure	O-ring
10k	G	0~10kPa	300%F.S.	600%F.S.	NBR, FKM
20k	G	0~20kPa	300%F.S.	600%F.S.	NBR, FKM
35k	G	0~35kPa	300%F.S.	600%F.S.	NBR, FKM
70k	G	0~70kPa	300%F.S.	600%F.S.	NBR, FKM
100k	G, A	0~100kPa	200%F.S.	500%F.S.	NBR, FKM

Note: G: Gauge pressure, A: Absolute pressure

Ordering information



Example of ordering information: PC10Y - 100k - G - 4w - I1 - C

Product model: PC10Y, 100k: pressure range 0~100kPa, G: gauge pressure, 4w: 4 wires electrical connection, I1: 1.5mA excitation, C: with temperature compensation.

Ordering tips:

1 Over-range or under-range use is allowed, recommended within ±30% F.S..

2 Pressure reference: 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 that is greater than the current atmospheric pressure.

(2) Absolute pressure is based on a vacuum.

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 service life or even damage the product.

4 1.5mA constant current compensation is standard. Suggest selecting this option with priority.

5 Negative pressure sensors differ completely in materials and processes from positive pressure sensors, so it cannot be replaced by standard 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.

Contact us

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