PC11 Pressure Sensor

Features

- With constant current and constant voltage excitation options
- Imported highly reliable pressure die
- Wide temperature compensation
- Normalized output available
- Compensation board filled with glue for protection against moisture
- A variety of pressure port available
- High performance, all solid, high reliability
- 18 months warranty period

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
- Weaponry

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.

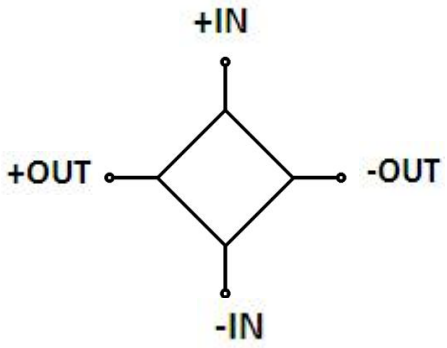
4 Misuse of the product may cause danger or personal injury.

Product overview

The PC11 pressure sensor packages a PC10 pressure sensor in a workpiece with a standard pressure port. The 300 type is mounted on a 2088 standard housing through a "300 to 2088 adapter". The 400 type can be directly mounted on a 2088 standard housing, which is convenient for users. This product is widely used in the process control and measurement of petroleum, chemical, metallurgy, aviation, aerospace, marine, medical equipment, vehicles, refrigerators, compressors and other industries.

Equivalent circuit

(1) 4 wire



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…100MPa
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	silicon soft wire
Compensation temp.	Constant current: 0℃～60℃ (≤70kPa), -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	All the liquids and gases compatible with 304.
Mechanical vibration	20g (20～5000Hz)
Shock	100g (10ms)
Service life	10×10^6 (cycles)

Structural performance parameters	
Diaphragm material	316L
Housing material	304
Oil filling	Silicon oil
Sealing ring	NBR or fluorine rubber

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	
Zero output		-2	±1	2	mV	
Full scale span output	1.5mA, 10kPa 1.5mA, other ranges 10V, 10kPa 10V, other ranges	30 60 60 98	90 100	150 102	mV	
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:

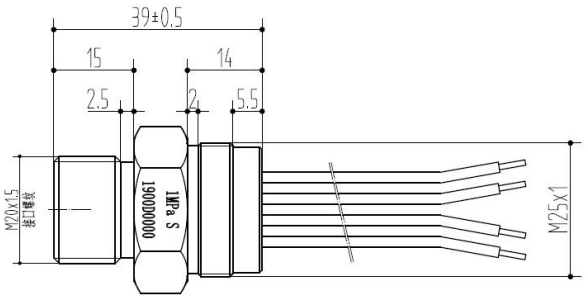
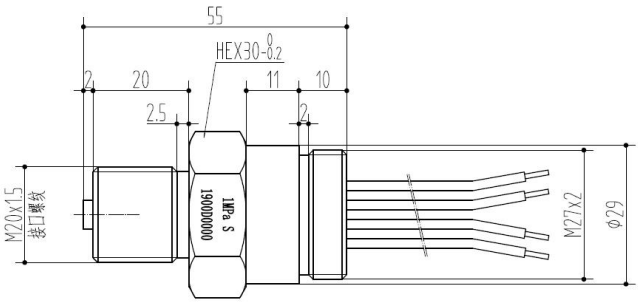
(1) Calculate according to BFSL least square method.

(2) In the compensation temperature range, refer to 30 ℃ for 0 ℃ ~ 60 and -10 ℃ ~ 70 ℃, and refer to 32.5 ℃ for -20 ℃ ~ 85 ℃.

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

Structure and dimensions

In mm

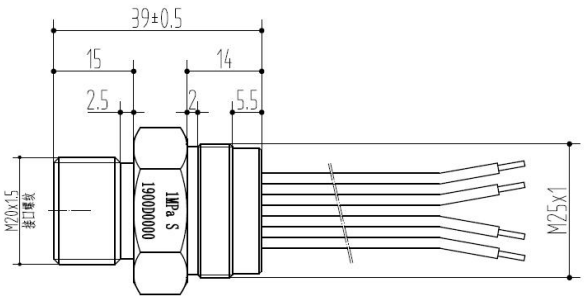
300 type	400 type
	

Pressure port available

300 type（housing port M25×1）	400 type（housing port M27×2）
Chinese standard：M20×1.5、M10×1、M10×1.5、M12×1、M12×1.5、M14×1.5、M16×1.5、M18×1.5、M20×1.5 female、M22×1.5、M27×2；	Chinese standard： M14×1.5、M16×1.5、M18×1.5、M20×1.5；
International：G1、G1/2、G1/4、G1/4 内、G1/8、G3/4、G3/8、NPT1/2、NPT1/4、NPT1/8、R1/2、R1/4、R3/8、7/16-20UNF；	International：G1/2、G1/4、G1/4 female、NPT1/2、NPT1/4、R1/4；

Electrical connection (in mm)

4 wire (4w)

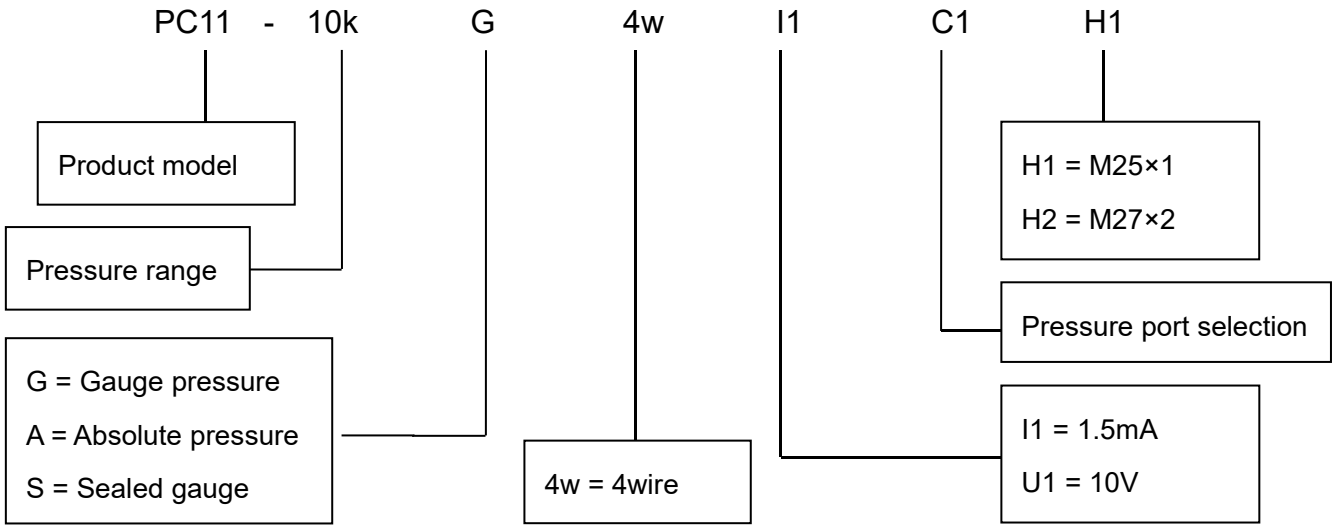


Wire color	Definition
Red	Excitation+(IN+)
Blue	Excitation-(IN-)
Yellow	Output+(OUT+)
White	Output-(OUT-)

Pressure range selection

Code	Pressure reference	Pressure range	Overpressure	Burst pressure	O-ring
10k	G	0～10kPa	300%FS	600%FS	NBR
20k	G	0～20kPa	300%FS	600%FS	NBR
35k	G, A	0～35kPa	300%FS	600%FS	NBR
70k	G	0～70kPa	300%FS	600%FS	NBR
100k	G, A	0～100kPa	200%FS	500%FS	NBR
160k	G, A	0～160kPa	200%FS	500%FS	NBR
250k	G, A	0～250kPa	200%FS	500%FS	NBR
400k	G, A	0～400kPa	200%FS	500%FS	NBR
600k	G, A	0～600kPa	200%FS	500%FS	NBR
1M	G, A	0～1MPa	200%FS	500%FS	NBR
1.6M	G, A, S	0～1.6MPa	200%FS	500%FS	NBR
2.5M	G, A, S	0～2.5MPa	200%FS	500%FS	NBR
4M	S	0～4MPa	200%FS	400%FS	NBR
6M	S	0～6MPa	200%FS	400%FS	Fluorine rubber
10M	S	0～10MPa	200%FS	400%FS	Fluorine rubber
16M	S	0～16MPa	200%FS	400%FS	Fluorine rubber
25M	S	0～25MPa	150%FS	400%FS	Fluorine rubber
40M	S	0～40MPa	150%FS	300%FS	Fluorine rubber
60M	S	0～60MPa	150%FS	300%FS	Fluorine rubber
100M	S	0～100MPa	150%FS	300%FS	Fluorine rubber
(-100～0)k	Omitted	-100～0kPa	300kPa	600kPa	NBR
(0～-100)k	Omitted	0～-100kPa	300kPa	600kPa	NBR
NP100k	Omitted	±100kPa	300kPa	600kPa	NBR
(-100～160)k	Omitted	-100～160kPa	480kPa	900kPa	NBR
(-100～250)k	Omitted	-100～250kPa	750kPa	1.25MPa	NBR
(-100～400)k	Omitted	-100～400kPa	800kPa	2MPa	NBR
(-100～600)k	Omitted	-100～600kPa	1.2MPa	3MPa	NBR
(-0.1～1.0)M	Omitted	-0.1～1MPa	2MPa	5MPa	NBR
(-0.1～1.6)M	Omitted	-0.1～1.6MPa	3MPa	9MPa	NBR
(-0.1～2.5)M	Omitted	-0.1～2.5MPa	5MPa	12.5MPa	NBR

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



Example: PC11-1MPaG4wI1C1H1

PC11 pressure sensor, pressure range: 1MPa, gauge pressure, 4 wire, 1.5mA excitation, pressure port: M20×1.5, housing port: 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, PC11 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 to select 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.

Contact us

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