PC11 Pressure Sensor

Features

- With constant current and constant voltage excitation options
- Highly reliable imported pressure die
- Wide temperature compensation
- The Compensating Board with Glue for Moisture-Proof Protection
- A variety of pressure port available
- High performance, all-solid-state, 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.

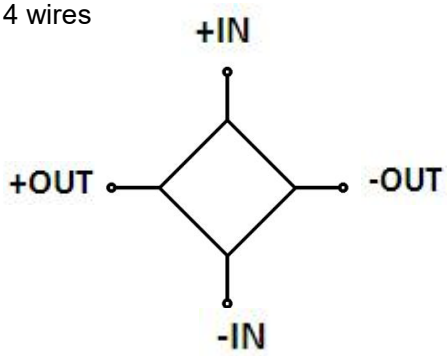
4 Misuse of the product may cause danger or personal injury.

Product overview

The PC11 pressure sensor packages a PC10 pressure sensor in a workpiece with a standard pressure port. The Model 300 is mounted on the 2088 standard housing via a "300-to-2088 adapter", while the Model 400 can be directly mounted to the standard 2088 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

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	-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: -10℃~70℃
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)
Durability	1×10^6 (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	Other ranges 100MPa	-0.3 -0.55	±0.2	0.3 0.55	%FS %FS	Note(1) 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	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	

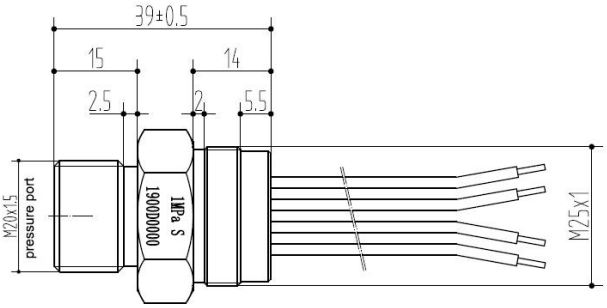
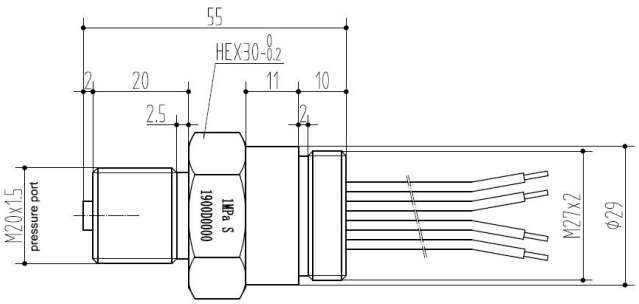
Note: (1) Calculate according to the BFSL least square method.

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

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

Structure and dimensions

In mm

300 type	400 type
	

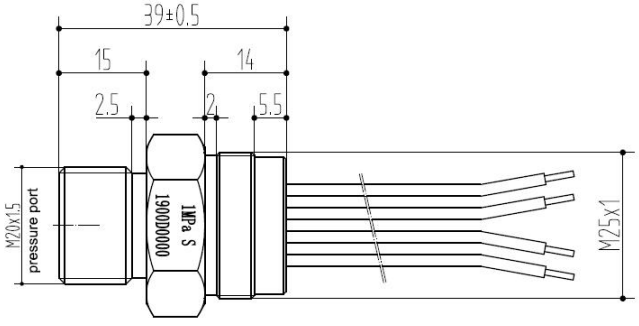
Pressure port available

In mm

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 female、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)

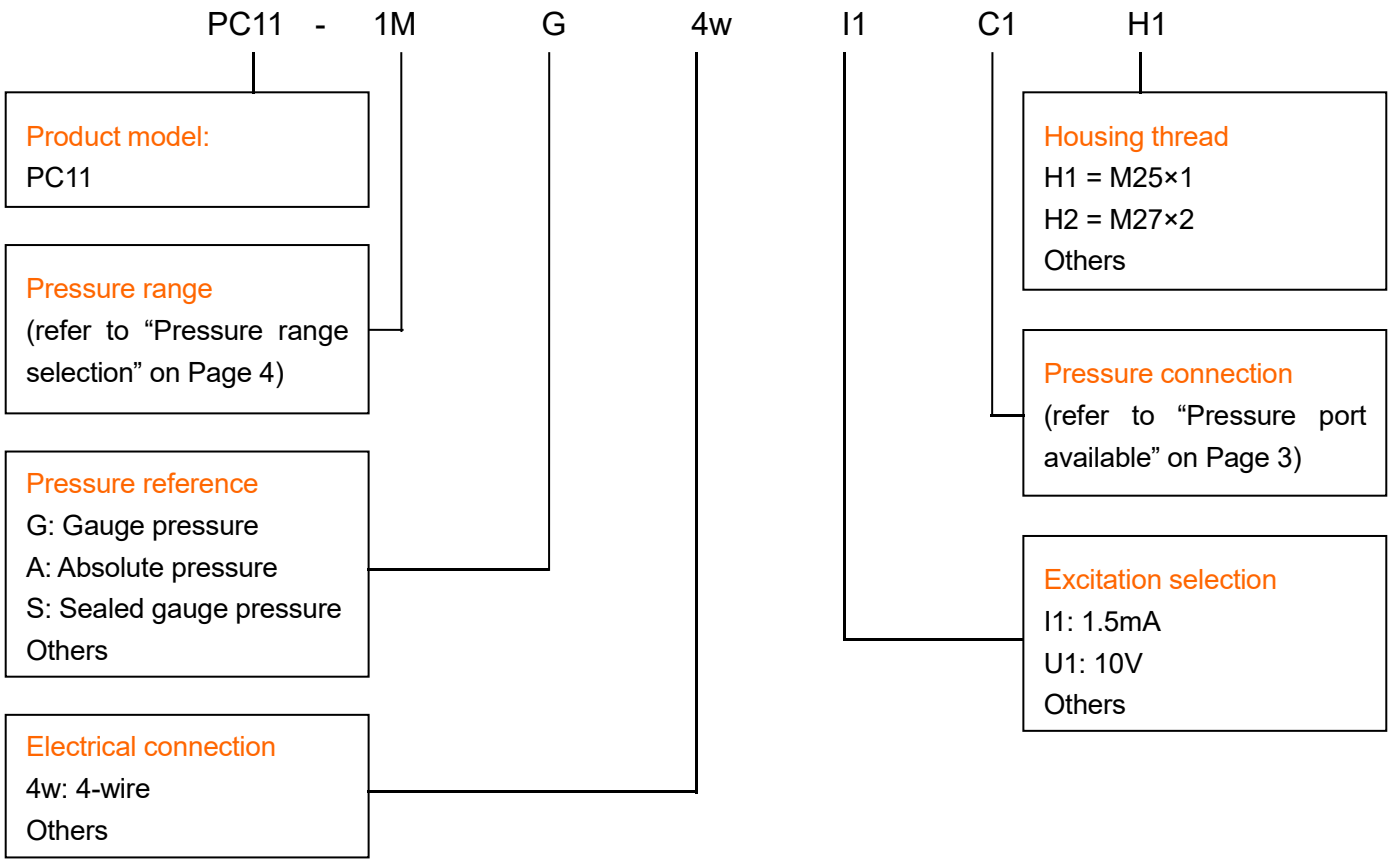


Wire color	Definition
Red	Excitation+(IN+)
Blue	Excitation-(IN-)
Yellow	Output+(OUT+)
White	Output-(OUT-)

Pressure range selection					
Code	Pressure reference	Pressure range	Overload pressure	Burst pressure	O-ring
10k	G	0~10kPa	300%FS	600%FS	NBR
20k	G	0~20kPa	300%FS	600%FS	NBR
35k	G	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

How to order



Example: PC11-1MG4wI1C1H1

PC11 pressure sensor, pressure range: 0~1MPa, gauge pressure, 4 wires, 1.5mA excitation, pressure port: M20×1.5, housing thread: M25×1.

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 6MPa, 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.

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