P19 High Performance Pressure Sensor

Features

- With constant current excitation
- Imported highly reliable NOVA pressure die
- Wide temperature compensation
- Ceramic compensation board
- φ19mm standard OEM
- All 316L material
- High performance, all solid, high reliability
- 18 months warranty period

Applications and industries

- 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

P19 High Performance Pressure Sensor is the core component for producing pressure sensors and pressure transmitters; as a kind of pressure sensitive elements with high performance, it can be conveniently processed through amplifying, and assembled into the transmitter with the standard signal output.

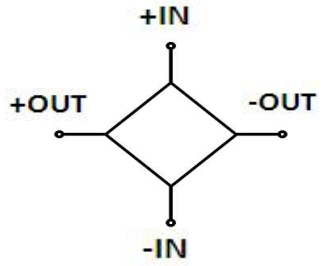
P19 High Performance Pressure Sensor packages highly reliable pressure die into 316L stainless steel housing; the external pressure is transmitted to the sensitive die through the stainless steel diaphragm and internally sealed silicon oil; the pressure die does not directly contact with the measured medium, so as to form all solid structure of pressure measurement, so this product can be applied to a variety of occasions, including harsh corrosive medium environment.

P19 pressure sensor adopts O-ring for pressure sealing, easy to install.

Our company can also undertake the special customization according to the requirements of the customers, for example, all-welded structure, wide temperature compensation, highly reliable, anti-strong shock and anti-vibration pressure sensors, which is more suitable for replacing imported products.

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	0～1psi…15psi
Pressure	Gauge pressure
Excitation	1.5mA recommended for constant current
Input	3kΩ～8kΩ
Electrical	Gold-plated KOVAR pin or 110mm silica gel soft wire
Compensated	Constant current: 0℃～70℃ (≤35kPa), -10℃～80℃ (other ranges)
Operating	-40℃～125℃
Storage temp.	-40℃～125℃
Insulation	≥200MΩ/250VDC
Response time	≤1Ms (up to 90%FS)
Measurement	All the liquids and gases compatible with 316L
Mechanical	20g (20～5000HZ)
Shock	100g (10ms)
Service life	$1\times10_6$(cycles)

Structural performance parameters

Diaphragm	316L
Housing	316L
Perfusion liquid	Silicon oil
Sealing ring	Fluorine rubber

Basic parameters

Item	Condition	Min	Typical	Max	Unit	Note
Nonlinearity		-0.2	±0.15	0.2	%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 span output	1.5mA	50			mV	
Zero temp. coefficient	1psi, 2.5psi, 5ps, 15psi	-1.5 -1	±1.2 ±0.75	1.5 1	%FS	Note (2)
Sensitivity temp. coefficient		-1	±0.75	1	%FS	Note (2)
Thermal hysteresis		-0.075	±0.05	0.075	%FS	Note (3)
Long-term stability		-0.2	±0.1	0.2	%FS/year	

Note:

(1) Calculate according to BFSL least square method.

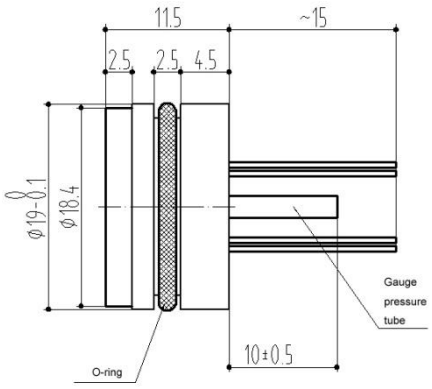
(2) The compensation temperature range for 1psi, 2.5psi, 5psi is 0℃～70℃, and the compensation temperature range for 15psi is -10℃～80℃, and refer to 35℃.

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

Outline dimension

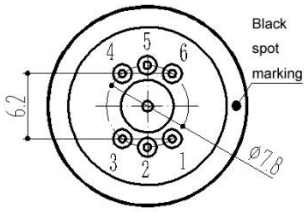
Tolerance unless otherwise specified: ±0.1mm

Type Ⅱ: Ceramic compensation board, no glue



Electrical connection

1 6 pins (6p)



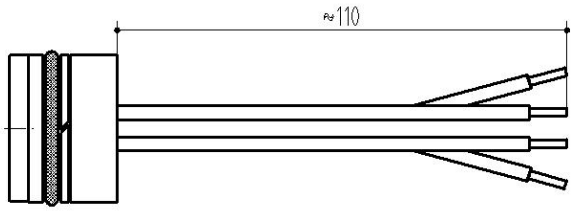
The wiring definition for range code 1p, 2.5p, 5p

Pin	Definition
4	Excitation+(IN+)
3	Excitation-(IN-)
2	Output+(OUT+)
5	Output-(OUT-)

The wiring definition for range code 15p

Pin	Definition
4	Excitation+(IN+)
3	Excitation-(IN-)
5	Output+(OUT+)
2	Output-(OUT-)

2 4 wires (4w)



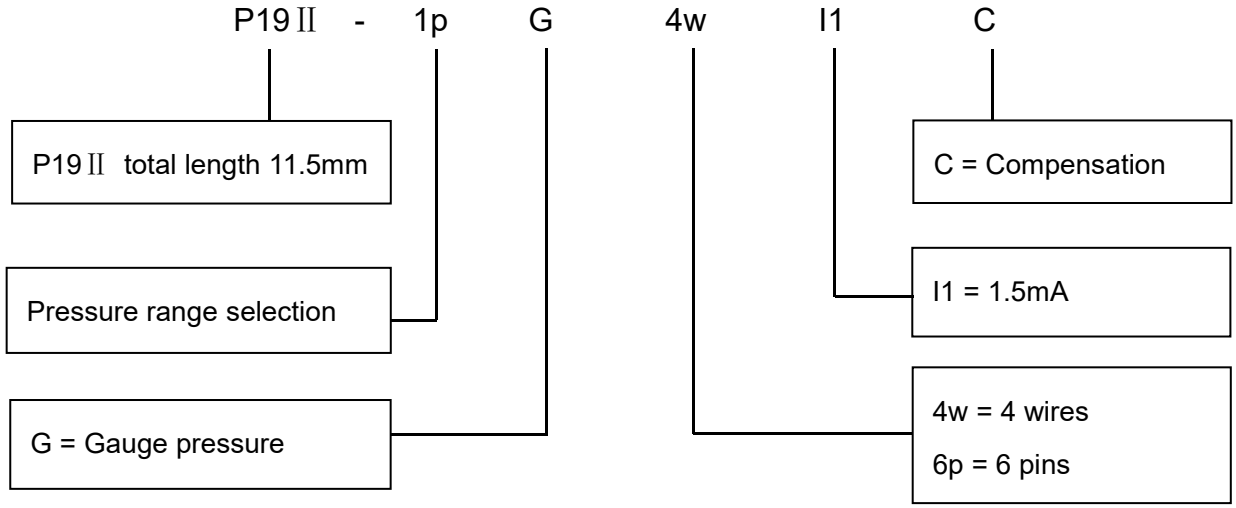
Wire color	Definition
Red	Excitation+(IN+)
Blue	Excitation-(IN-)
Yellow	Output+(OUT+)
White	Output-(OUT-)

Pressure range selection

Pressure range code	Pressure reference	Pressure range	Overpressure	Burst pressure	O-ring
1p	G	0～1psi (0～7kPa)	300%FS	600%FS	Fluorine rubber
2.5p	G	0～2.5psi (0～17.5kPa)	300%FS	600%FS	Fluorine rubber
5p	G	0～5psi (0～35kPa)	300%FS	600%FS	Fluorine rubber
15p	G	0～15psi (0～105kPa)	200%FS	500%FS	Fluorine rubber

Note: G stands for gauge pressure, A, absolute pressure, S, sealed gauge pressure.

How to order



Example: P19Ⅱ-1p4wI1C

P19Ⅱ pressure sensor, pressure range 1psi, gauge pressure, 4 wires, 1.5mA excitation, current compensation.

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, P19 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 this option with priority.
5 The material and process for manufacturing negative pressure sensors are not all the same with 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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