

# P20 Monocrystalline Silicon Pressure Sensor

## Features

- MEMS monocrystalline silicon pressure chip imported from Germany
- High accuracy and excellent overload resistance
- High performance, all solid, and high reliability
- 316L stainless steel fully-welded integrated structure
- Gauge pressure sensors can be used for negative pressure measurement

## Applications

- Provide OEM parts for industrial pressure transmitter manufacturers

### 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 P20 monocrystalline silicon pressure sensor adopts the MEMS monocrystalline silicon pressure chip imported from Germany. It achieves international leading overpressure performance and ensures excellent signal stability. It is assembled with an all-welded sealing structure and filled with silicone oil under high vacuum. Diaphragms made of different materials isolate the pressure die from the measured medium, enabling the sensor to deliver long-term reliable measurement of differential pressure signals from various highly corrosive media.

This product allows measured pressure to be directly applied to the sensor's diaphragm, causing the diaphragm to undergo a microdisplacement proportional to the pressure. The integrated electronic circuit can detect this change and convert the signal into a standard measurement signal corresponding to the applied pressure.

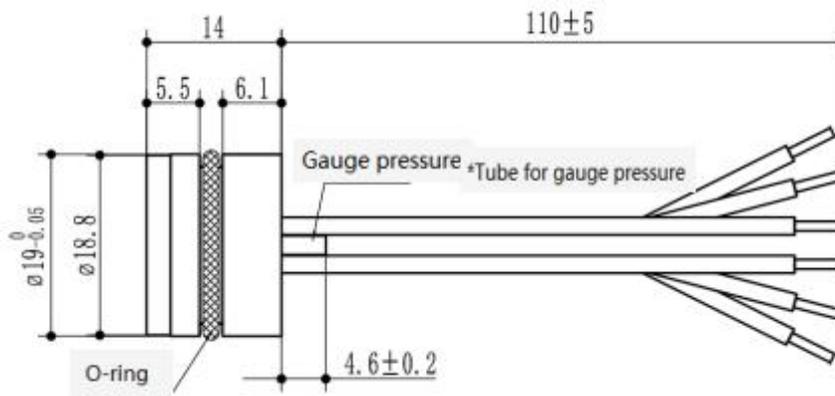
### Notes:

- 1 Do not misuse the 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.

**Performance parameters**

Excitation	5V constant voltage
Operating temp.	-40~125°C
Storage temp.	-40~125°C
Output signal	200~300mV (@10MPa A); 60~140 mV (other ranges)
Zero temp. coefficient	±0.1%FS /°C
Temperature hysteresis	±0.1%FS (pressure range≥100kPa)
Pressure hysteresis	±0.05%FS
Long-term drift	±0.05%FS /year
Nonlinearity	±0.5%FS (pressure range≥100kPa)
Diaphragm material	316L, Hastelloy C

**Structure and dimension (in mm)**



**Electrical connection**

6 wires	Electrical schematic diagram	Wire color	Definitions
		Red Blue Yellow White Green Black	Excitation+ (IN+) Excitation- (IN-) Output+ (OUT+) Output- (OUT-) Temperature+ (Diode+) Temperature- (Diode-)
1 × 7P terminal	Electrical schematic diagram	Wire color	Wiring definitions
		Red Blue Yellow White Green Black	Excitation+ (IN+) Excitation- (IN-) Output+ (OUT+) Output- (OUT-) Temperature+ (Diode+) Temperature- (Diode-)

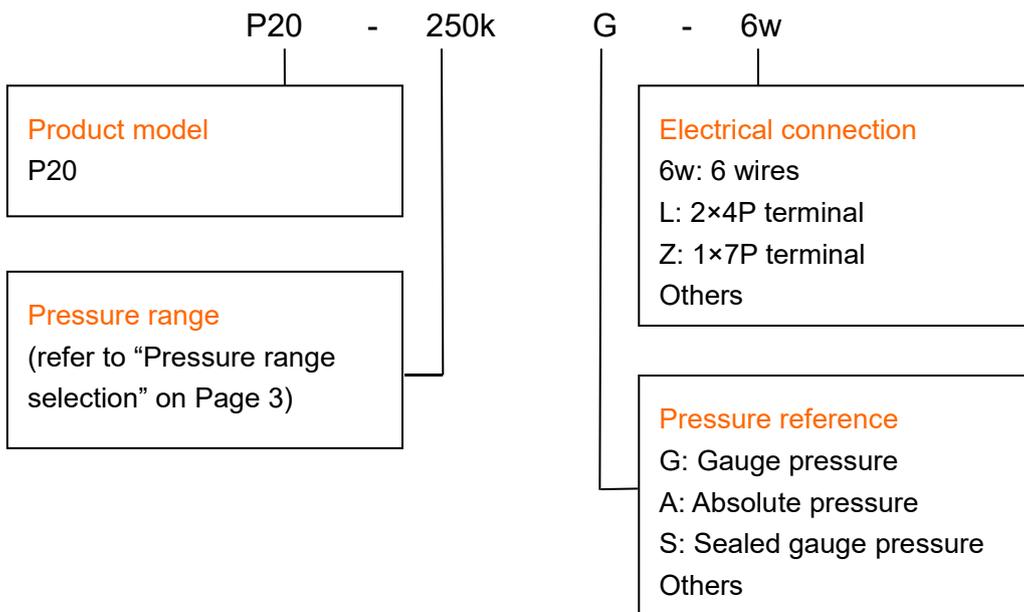
2×4P	Electrical schematic diagram	Wire color	Wiring definitions
		Red Blue Yellow White Green Black	Excitation+ (IN+) Excitation- (IN-) Output+ (OUT+) Output- (OUT-) Temperature+ (Diode+) Temperature- (Diode-)

### Pressure range selection

Code	Pressure reference	Pressure range	Overload pressure	O-ring
100k	G	-100~100kPa	1MPa	NBR
100k	A	0~100kPa	1MPa	NBR
250k	G	-100~250kPa	2MPa	NBR
250k	A	0~250kPa	2MPa	NBR
1M	G	-0.1~1MPa	6MPa	NBR
3M	G	-0.1~3MPa	15MPa	NBR
10M	A	0~10MPa	20MPa	NBR
20M	A	0~20MPa	60MPa	NBR
40M	A	0~40MPa	80MPa	NBR

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

### How to order



**Example:** P20-250kG-6w

Product model: P20, pressure range: -100~250kPa, gauge pressure, electrical connection 6 wires.



## Ordering tips

- 1 It can be used over-range or down-range, and the amplitude is controlled within 30% FS.
- 2 Pressure reference consists of gauge pressure, absolute pressure, and sealed gauge pressure.
  - (1) Gauge pressure is measured with the current atmospheric pressure, generally higher than it. Negative pressure is a special case of gauge pressure, referring to the working condition where the pressure of the work site is below 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 durability or even damage the product.
- 4 The product typically uses a 5V constant voltage excitation, which is recommended as the primary choice.
- 5 The materials and processes for manufacturing negative pressure sensors are different from those of positive pressure, so the negative pressure sensors cannot be replaced by 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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