

# P20 Monocrystalline Silicon Pressure Sensor

## Features

- MEMS monocrystalline silicon pressure chip imported from Germany
- High accuracy, super overpressure resistance
- High performance, all solid, high reliability
- Stainless steel 316L all welded integrated structure
- Gauge pressure type 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

P20 monocrystalline silicon pressure sensor adopts MEMS monocrystalline silicon pressure chip imported from Germany to achieve international leading overpressure performance and ensure the excellent signal stability. Assembled with all-welded seal structure and filled with silicone oil under high vacuum, diaphragm of different materials isolates measured medium and pressure die, meanwhile, the sensor performs long-term reliable measurement of differential pressure signals of various strong corrosive media.

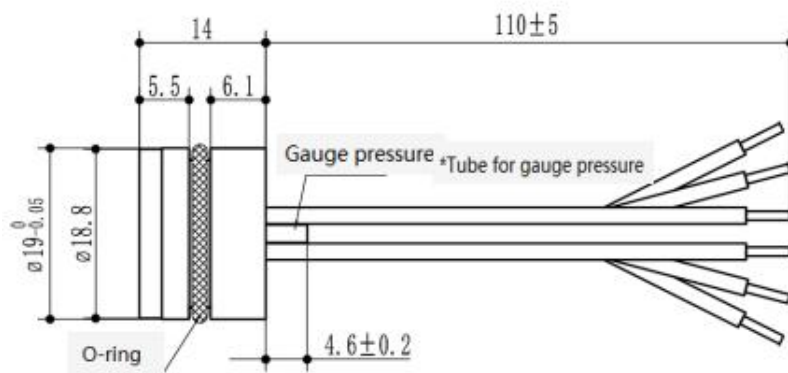
The measured pressure acts directly on the diaphragm of the sensor, so that the diaphragm produces a small displacement proportional to the pressure. With integrated electronic circuit to detect the change, it converts and outputs a standard measurement signal corresponding to the pressure.

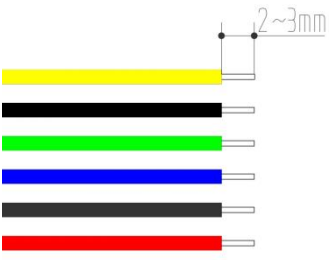
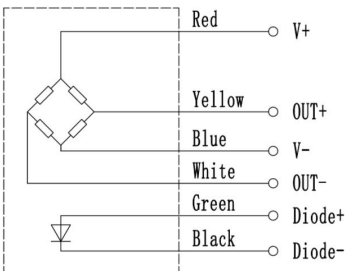
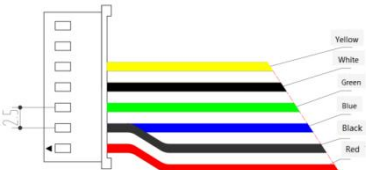
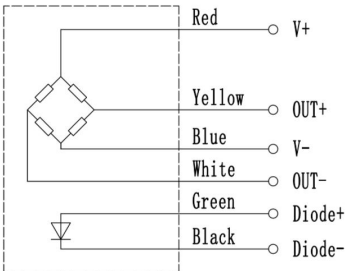
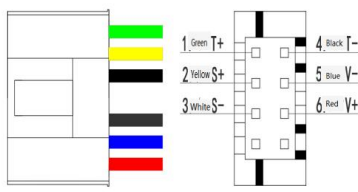
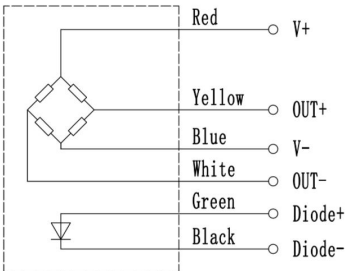
### Notes:

- 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.

## Performance parameters

Excitation	5V constant voltage
Operating temp.	-40~125℃
Storage temp.	-40~125℃
Output	200~300mV (@10MPa A)    60~140 mV (other ranges)
Zero temp. coefficient	±0.1%FS/℃
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


**Electrical connection**

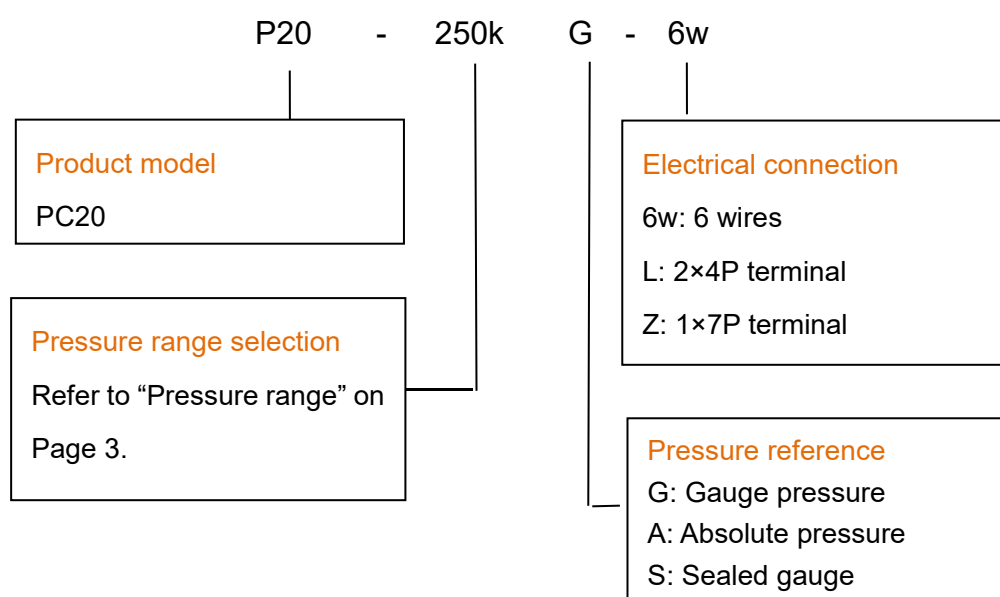
6 wires	Electrical schematic diagram	Wire color	Wiring definitions
		Red Blue Yellow White Green Black	Excitation+ (IN+) Excitation- (IN-) Output+ (OUT+) Output-(OUT-) Temperature +(Diode+) Temperature-(Diode-)
1 × 7P terminal	Electrical schematic diagram	Wire color	Wiring definitions
		Red Blue Yellow White Green Black	Excitation+ (IN+) Excitation- (IN-) Output+ (OUT+) Output-(OUT-) Temperature +(Diode+) Temperature-(Diode-)
2×4P	Electrical schematic diagram	Wire color	Wiring definitions
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## Pressure range selection

Code	Pressure reference	Pressure range	Overpressure	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

Refer to product model P20, 250k:pressure range -100~250kPa. G: gauge pressure. 6w: 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. The pressure mode is divided into gauge pressure, absolute pressure and sealing pressure.
  - (1) Gauge pressure refers to the measurement based on the current atmospheric pressure, generally referring to the measurement greater than the current atmospheric pressure; Negative pressure is a special case of gauge pressure, which refers to the working condition lower than the current atmospheric pressure on the working site.
  - (2) Absolute pressure is based on vacuum.
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 will affect the service life of the product or even damage the product.
4. The common excitation of product is 5V constant voltage, so it is recommended to give priority to it.
5. The materials and processes for manufacturing negative pressure core are not the same as those for positive pressure, so the negative pressure core cannot be replaced by gauge pressure core.
6. If there are special requirements for product performance parameters and functions, welcome to negotiate with our company.

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.

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