

# PCM10 Intelligent Pressure Sensor

## Features

- Intelligent, a variety of output forms options
- Highly reliable imported pressure die
- Wide temperature digital compensation
- ASIC calibration
- I<sup>2</sup>C interface protocol is supported
- low-power
- All 316L stainless steel integrated design
- O-ring sealing
- High performance, all solid-state customized products

## Applications

- Hydraulic control system
- Diving depth detection
- Seal detection system
- Industrial process control
- Medical equipment
- Fluid pressure measurement

### 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.



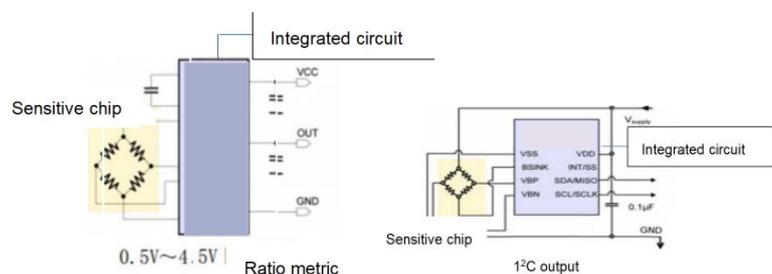
## Product overview

The PCM10 intelligent pressure sensor is a new product designed and developed for low-pressure and high-performance applications.

Based on the mature structure and front-end process of the silicon piezoresistive pressure sensor, PCM10 is equipped with a customized, dedicated digital integrated circuit for temperature compensation and calibration, and has various industrial-standard analog and digital signals. The analog signal has a 0.5~4.5V proportional output, and the digital signal output supports the I<sup>2</sup>C interface protocol.

The PCM10 intelligent pressure sensor features an integrated structure and circuit design, delivering a small size, low power consumption, effortless installation and use, and high stability. Digital signal output makes it more widely used.

## Equivalent circuit



### 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	0~35kPa...6MPa
Pressure reference	Gauge pressure   Absolute pressure   Sealed gauge pressure
Supply&Output signal	0.5 to 4.5V ratiometric (5V excitation) [Note(1)]
	I <sup>2</sup> C (3.3V excitation) [Note(2)]
Response time	≤50ms
Compensation temp.	0~60°C (<100kPa)
	-20~85°C (other ranges)
Operating temp.	-40~105°C
Storage temp.	-40~125°C
Insulation resistance	≥200MΩ/250VDC
Measured medium	All the liquids and gases compatible with 316L
Mechanical vibration	20g (20~5000HZ)
Shock	100g/10ms
Durability	10 <sup>6</sup> pressure cycles
Weight	19~25g

### Structural performance parameters

Diaphragm material	SS316L
Housing material	SS316L
Oil filling	Silicon oil
Sealing ring	NBR O-ring or Fluorine rubber O-ring

### Basic parameters

Item	Min	Nominal	Max	Unit
Accuracy	---	±0.5	±1.0	%FS[note (3)]
Hysteresis	---	±0.05	±0.1	%FS
Repeatability	---	±0.05	±0.1	%FS
Zero temperature drift	---	±1.0	±1.5	%FS[note (3)]
Sensitivity temp. coefficient	---	±1.0	±1.5	%FS[note (3)]
Thermal hysteresis	---	±0.05	±0.2	%FS
Long-term stability	---	±0.25	---	%FS/Year

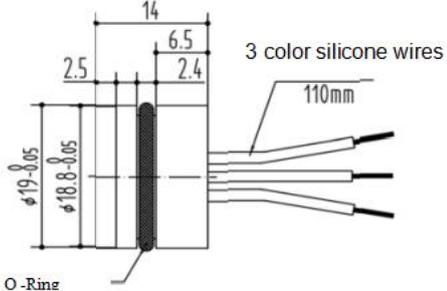
Note: (1) 5V power supply, supply voltage range: 5±0.1V.

(2) 3.3V power supply, supply voltage range: 3.1V~3.6V; **Customized low-power versions are available.**

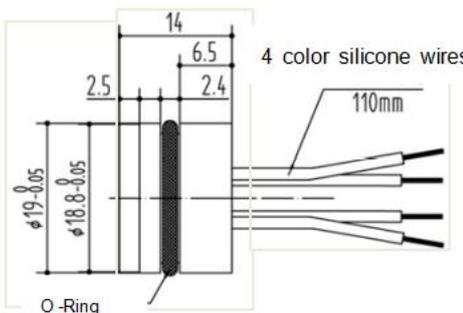
(3) Within the compensation temperature range, the compensation temperature is referenced to 25°C.

## Structure and electrical connection

(1) 5V power supply, 0.5~4.5V ratiometric

3 Wires Connection		Wire colour	Connection
		Red	Excitation (VDD)
		Blue	Ground (GND)
		Yellow	Voltage Output (Vout)

(2) 3.3V power supply, I<sup>2</sup>C output

4 Wires Connection		Wire colour	Connection
		Red	Excitation (VDD)
		Blue	Ground (GND)
		Yellow	Clock Line (SCL)
		White	Data Line (SDL)

## Pressure range selection

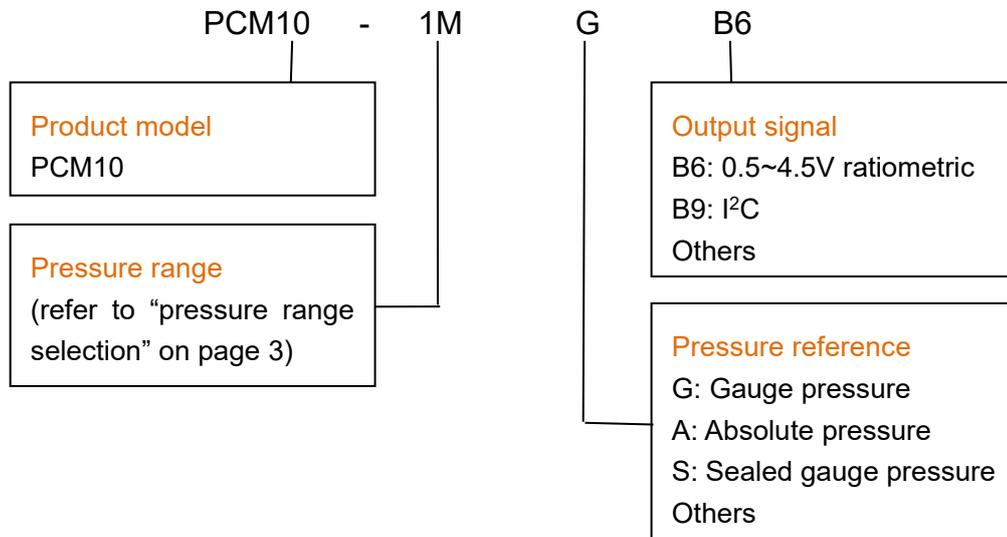
Code	Pressure reference	Pressure range	Overload pressure	Burst pressure
35k	G	0~35kPa	300%FS	400%FS
100k	G, A	0~100kPa	200%FS	300%FS
250k	G	0~250kPa	200%FS	300%FS
600k	G	0~600kPa	200%FS	300%FS
1M	G	0~1.0MPa	200%FS	300%FS
1.6M	G, S	0~1.6MPa	200%FS	300%FS
2.5M	G, S	0~2.5MPa	200%FS	300%FS
4M	S	0~4MPa	200%FS	300%FS
6M	S	0~6MPa	200%FS	300%FS

Note: G: Gauge pressure (ventilation gauge pressure, taking current atmospheric pressure as zero)

A: Absolute pressure (vacuum is zero)

S: Sealed gauge pressure (calibrated atmospheric pressure is zero)

## How to order



### Example: PCM10-1MGB6

The model is PCM10; pressure range: 0~1.0MPa; gauge pressure; power supply: 5V; output signal: 0.5~4.5V (R/W)

### Ordering tips

- 1 Please confirm the product supply power, output signal, and the pressure range, including the measurement range and the overload range if ordered.
- 2 The product doesn't set inventory. Please place an order in advance for urgent needs.
- 3 Customization is available for special requirements on the pressure range, compensation temperature range, and output signal.

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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