

# PCM401 Flameproof Pressure Transmitter

## Features

- Diffused piezoresistive silicon pressure sensor
- Solid and well-sealed aluminum alloy junction box, convenient for outdoor installation and use
- For gas, liquid and steam pressure measurement
- Provide low, medium and high pressure ranges
- LCD option
- Isolation explosion-proof

## Applications

- Industrial site control
- Coal mine
- Oilfield
- Heavy Industry
- Chemicals
- Gas network
- Water supply network

### 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

PCM401 flameproof pressure transmitter adopts high-performance piezoresistive silicon oil-filled pressure sensor as pressure sensitive core. Through internal ASIC, the millivolt signal of sensor is transmitted into standard long-distance transmission current signal. PCM401 can be directly connected with computer interface card, control instruments, intelligent meters or PLC conveniently. The series of products are widely used in industrial process control, petroleum, chemical, metallurgical and other industries.

The product complies with the regulations of GB3836.1-2010 "Explosive Environment Part 1: General Requirements for Equipments" and GB3836.2-2010 "Explosive Environment Part 2: Equipments Protected by Flameproof Enclosure 'd'". Explosion-proof mark Exd IIB T6 applies to factories with flammable gas of IIA, IIB grade, T1-T6 group or environment with explosive mixture of steam and air.

Flameproof pressure transmitters operate normally at the following altitude, ambient air temperature and ambient relative humidity: altitude not exceeding 2000m; ambient air temperature -10°C~+60°C; relative humidity of 90% (+25°C).

### 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.

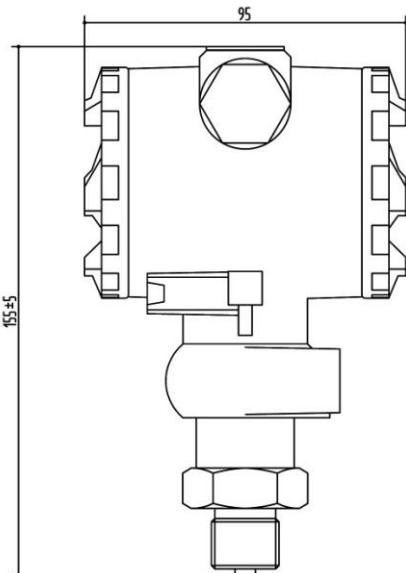
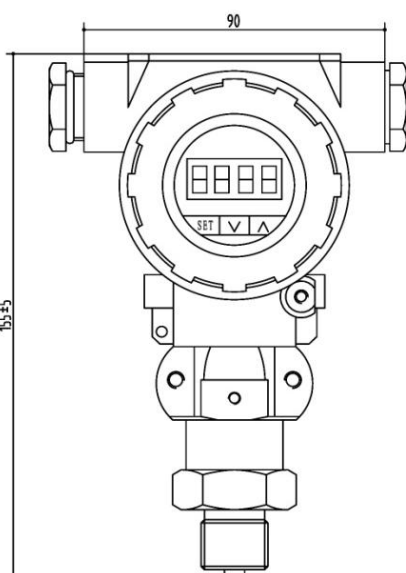
### Performance parameters

|                        |   |
|------------------------|---|
| Pressure range         | -0.1MPa…0~0.01MPa…100MPa  |
| Pressure reference     | Gauge pressure, Absolute pressure, Sealed gauge pressure            |
| Operating temp.        | -20℃~85℃  |
| Medium temp.           | -20℃~85℃  |
| Storage temp.          | -40℃~125℃   |
| Zero temp. coefficient | ±1.5%FS (@-20℃~85℃)   |
| Span temp. coefficient | ±1.5%FS (@-20℃~85℃)   |
| Overpressure           | 150%FS~300%FS   |
| Mechanical vibration   | 20g (20~5000HZ)   |
| Shock                  | 100g (11ms)   |
| Accuracy               | 0.5   |
| Insulation             | 100MΩ/250VDC  |
| Response time          | ≤1ms (Up to 90%FS)  |
| Long term stability    | ±0.2%FS/Year  |
| Protection             | IP65  |
| Ex-proof               | Exd II BT6  |
| Material               | Low copper aluminum alloy for housing; 316L for isolation diaphragm |
| Medium compatibility   | All media compatible with stainless steel 316L                      |

### Performance parameters

| Code   | B1       | B2       | B3       | B6       | B7       |
|--------|----------|----------|----------|----------|----------|
| Output | 4~20mA   | 1~5V     | 0~5V     | 0.5~4.5V | 0~10V    |
| Supply | 12~30VDC | 12~30VDC | 12~30VDC | 12~30VDC | 12~30VDC |

### Structure

| Type               | J12: Flameproof housing   | J13: Flameproof housing with display   |
|--------------------|---|--|
| Dimension<br>In mm |  |  |

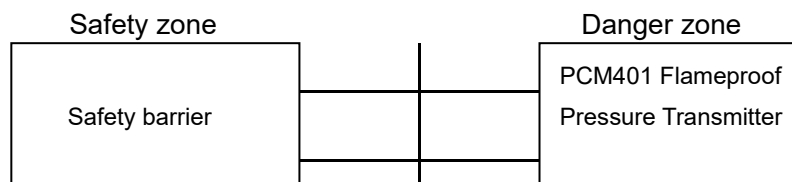
## Wiring method

|                                   |  |  |
|-----------------------------------|--|--|
| Wiring method<br>(Current output) | <p style="text-align: center;">2 non-polar wires</p> |  |
| Wiring method<br>(Voltage output) |  |  |

## Pressure port

| Type               | C1: M20×1.5 | C2: G1/2 | C7: NPT1/2 |
|--------------------|-------------|----------|------------|
| Dimension<br>In mm |             |          |            |
| Recommended torque | 15~25Nm     | 15~25Nm  | 15~25Nm    |

## Flameproof parameters



Safety barrier parameters should meet:  $C_0 \leq 35V$ ,  $I_0 \leq 35mA$

Transmitter internal parameters:  $C_1 = 0.01\mu F$ ,  $L_1 = 0$

The distribution parameters of the connecting cable between safety barrier and the transmitter should meet:  $C_p \leq C_o - C_i$ ,  $L_p \leq L_o - L_i$

Note:

Uo: Maximum open circuit voltage of safety barrier

Io: Maximum short circuit current of safety barrier

Co: Maximum allowable capacitance outside the safety barrier

Lo: Maximum allowable inductance outside the safety barrier

Cp: Maximum allowable distributed capacitance of connecting cable

Lp: Maximum allowable distributed inductance of connecting cable

Ci: Maximum capacitance inside the transmitter

Li: Maximum inductance inside the transmitter

**Pressure range selection**

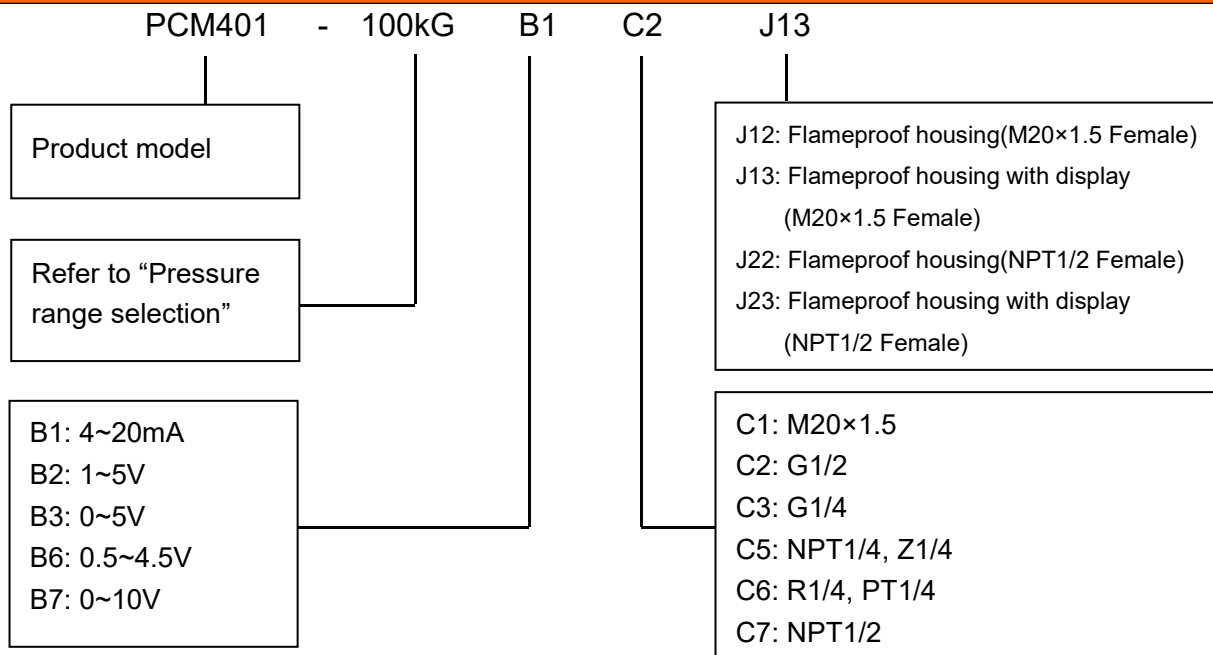
| Pressure range code | Pressure reference | Pressure range | Overpressure | Burst pressure | Remark |
|---------------------|--------------------|----------------|--------------|----------------|--------|
| 10kG                | G                  | 0~10kPa        | 300%FS       | 600%FS         |        |
| 20kG                | G                  | 0~20kPa        | 300%FS       | 600%FS         |        |
| 35kG                | G                  | 0~35kPa        | 300%FS       | 600%FS         |        |
| 70kG                | G                  | 0~70kPa        | 300%FS       | 600%FS         |        |
| 100kG               | G                  | 0~100kPa       | 200%FS       | 500%FS         |        |
| 160kG               | G                  | 0~160kPa       | 200%FS       | 500%FS         |        |
| 250kG               | G                  | 0~250kPa       | 200%FS       | 500%FS         |        |
| 400kG               | G                  | 0~400kPa       | 200%FS       | 500%FS         |        |
| 600kG               | G                  | 0~600kPa       | 200%FS       | 500%FS         |        |
| 1MG                 | G                  | 0~1MPa         | 200%FS       | 500%FS         |        |
| 100kA               | A                  | 0~100kPa       | 200%FS       | 500%FS         |        |
| 160kA               | A                  | 0~160kPa       | 200%FS       | 500%FS         |        |
| 250kA               | A                  | 0~250kPa       | 200%FS       | 500%FS         |        |
| 400kA               | A                  | 0~400kPa       | 200%FS       | 500%FS         |        |
| 600kA               | A                  | 0~600kPa       | 200%FS       | 500%FS         |        |
| 1MA                 | A                  | 0~1MPa         | 200%FS       | 500%FS         |        |
| 1.6MS               | S                  | 0~1.6MPa       | 200%FS       | 500%FS         |        |
| 2.5MS               | S                  | 0~2.5MPa       | 200%FS       | 500%FS         |        |
| 6MS                 | S                  | 0~6MPa         | 200%FS       | 400%FS         |        |
| 10MS                | S                  | 0~10MPa        | 200%FS       | 400%FS         |        |
| 16MS                | S                  | 0~16MPa        | 200%FS       | 400%FS         |        |
| 25MS                | S                  | 0~25MPa        | 150%FS       | 400%FS         |        |
| 40MS                | S                  | 0~40MPa        | 150%FS       | 300%FS         |        |
| 60MS                | S                  | 0~60MPa        | 150%FS       | 300%FS         |        |
| 100MS               | S                  | 0~100MPa       | 150%FS       | 300%FS         |        |

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

## Accessory

| Name                     | Appearance  | Description  | Material No. |
|--------------------------|---|--|--------------|
| Bracket for 2088 housing |  | Applicable to pipe diameter: $\phi 50 \leq D \leq \phi 62$ | 100040300006 |

## How to order



Example: PCM401-100kGB1C2J13

Refer to product model PCM401, with pressure range 0~100kPa, pressure reference gauge pressure, output signal 4~20mA with display, pressure port G1/2, electrical connection M20×1.5 Female, and flameproof housing with display.

### Ordering tips:

- (1) Display has LED and LCD types. Please specify in the order.
- (2) For special requirements on the product appearance and performance parameters, customization is available.

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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