

# Pressure Transmitter for Building Automation

## MPM4503



### Features

- MSG (microfused silicon strain gauge) technology; overpressure and water hammer resistant
- Compact design; cost-effective; wide applications
- Temperature compensation and linear correction

### Application

- Energy and water treatment systems
- Building automation systems
- Smart IoT solutions
- VFD constant pressure water supply
- Compressors

### Introduction

MPM4503 Pressure Transmitter is a cost-effective measuring instrument for reliable pressure measurement. It features a silicon microfused sensitive element combined with an amplified circuit with linear correction and temperature compensation. The stainless steel diaphragm provides excellent resistance to sudden overpressure and ensures stable performance under various operating conditions. Produced on an automated production line with controlled

specifications, each unit undergoes strict component, semi-finished, and finished product testing and aging to guarantee high consistency and long-term stability.

### Specification

#### 1. Basic specifications

|                         |  |
|-------------------------|--|
| Pressure Range          | 0MPa ~ 1MPa...5MPa                                     |
| Overpressure            | $\leq 1.5 \times FS$                                   |
| Burst pressure          | $\leq 5 \times FS$ (Max 10MPa)                         |
| Pressure Type           | Gauge, Sealed gauge                                    |
| Accuracy                | $\leq \pm 1\% FS$                                      |
| Long-term stability     | $< 0.3\% FS/year$                                      |
| Compensated temperature | 0°C ~ 70°C   |
| Operating temperature   | -10°C ~ 80°C   |
| Storage temperature     | -40°C ~ 100°C  |
| Vibration               | 5g, 10Hz ~ 500Hz<br>(GB/T2423.10/IEC60068-2-6)         |
| Shock                   | 10g, 11ms<br>(GB/T2423.5/IEC60068-2-27)                |
| Insulation resistance   | 100MΩ, 500V  |
| IP rating               | IP65   |
|                         | IP68 (5 meters under room temperature water, 24 hours) |
| Weight                  | $\leq 60g$   |

## 2. Output signals

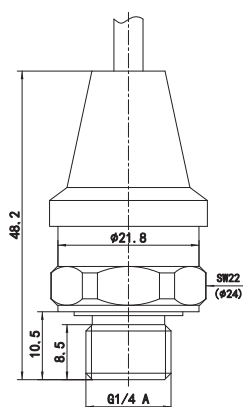
| Output Signal  | Supply voltage     | Output configuration | Load Resistance            | Transmission Distance                      |
|----------------|--------------------|----------------------|----------------------------|--|
| 4mA ~ 20mA DC  | 10V ~ 28V DC       | 2-wire               | $\leq (U-10)/0.02(\Omega)$ | $< 1000m(@24V DC, 250\Omega \text{ load})$ |
| 0.5V ~ 4.5V DC | 5V $\pm$ 0.1V DC   | 3-wire               | $\geq 10k\Omega$           | $\leq 5m$                                  |
| 0.5V ~ 2.5V DC |                    |                      |                            |  |
| 0.5V ~ 2.5V DC | 3.3V $\pm$ 0.1V DC |                      |                            |  |

## EMC

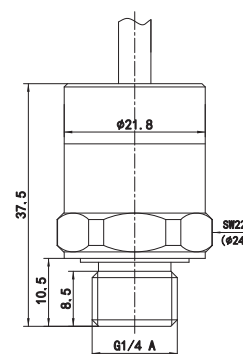
| No. | Test Item  | Standard                   |
|-----|--|----------------------------|
| 1   | Electrostatic discharge immunity test  | GB/T 17626.2/IEC 61000-4-2 |
| 2   | Radiated, radio-frequency, electromagnetic field immunity test                     | GB/T 17626.3/IEC 61000-4-3 |
| 3   | Power frequency magnetic field immunity test                                       | GB/T 17626.8/IEC 61000-4-8 |
| 4   | Electrical fast transient/burst immunity test (power port)                         | GB/T 17626.4/IEC 61000-4-4 |
| 5   | Surge immunity test (power port)   | GB/T 17626.5/IEC 61000-4-5 |
| 6   | Immunity to conducted disturbances, induced by radio-frequency fields (power port) | GB/T 17626.6/IEC 61000-4-6 |

## Outline Construction

(Unit:mm)



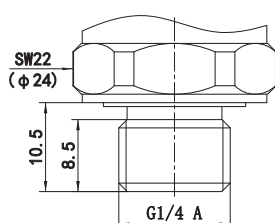
IP65 protection class



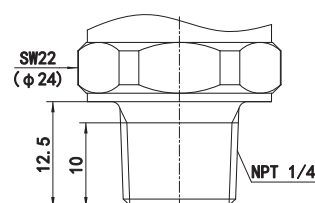
IP68 protection class

## Process Connection

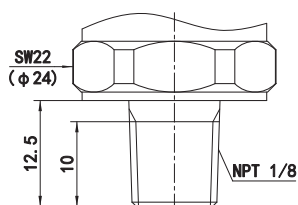
(Unit:mm)



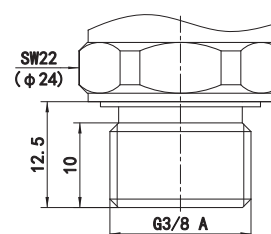
C2 (G1/4 Male, face seal)



C6 (NPT1/4 Male)



C7 (NPT1/8 Male)



C16 (G3/8 Male, face seal)

## Electrical Connection

| Color | 2-wire  | 3-wire |
|-------|---------|--------|
| Red   | +V      | +V     |
| Green | Null    | +OUT   |
| Black | OV/+OUT | GND    |

## Construction Material

### Wetted part

Isolated diaphragm: SS 17-4PH

Pressure port: SS 304

O-ring: FKM/NBR

### Non-Wetted part

Cable: Φ5mm PVC 3-core dedicated cable

## Order Guide

|                    |  |
|--------------------|--|
| MPM4503            | Pressure Transmitter   |
| Range              | Measuring range: 0MPa ~ 10MPa...50MPa                        |
| [0 ~ X]MPa         | X: actual measurement range                                  |
| Code               | Electrical Connection  |
| B2                 | Cable  |
| Code               | Output Signal  |
| E                  | 4mA ~ 20mA DC  |
| K                  | 0.5V ~ 4.5V DC   |
| W                  | 0.5V ~ 2.5V DC   |
| Code               | Power Supply   |
| V6                 | 5V±0.1V DC (for output signals K, W only)                    |
| V7                 | 3.3V±0.1V DC (for output signals W only)                     |
| V22                | 10V ~ 28V DC (for output signals E only)                     |
| Code               | Process Connection   |
| C2                 | G1/4 Male, face seal   |
| C6                 | NPT1/4 Male  |
| C7                 | NPT1/8 Male  |
| C16                | G3/8Male, face seal  |
| Code               | IP rating  |
| IP65               | IP65   |
| IP68               | IP68 (submersible to 5m for 24 hours at ambient temperature) |
| Code               | Cable length (unit: m)                                       |
| L0D5               | 0.5  |
| L001               | 1  |
| L1D5               | 1.5  |
| L002               | 2  |
| L003               | 3  |
| L005               | 5  |
| L008               | 8  |
| L010               | 10   |
| MPM4503            | [0 ~ 1]MPa   |
| B2                 |  |
| E                  |  |
| V22                |  |
| C2                 |  |
| IP65               |  |
| L0D1               |  |
| The complete spec. |  |

**Notes**

1. Please pay attention that the measured medium shall be compatible with the material of wetted parts; The maximum torque applied during the disassembly of the transmitter is  $20\text{N}\cdot\text{m} \sim 25\text{N}\cdot\text{m}$ .
2. I<sup>2</sup>C output is available upon request. Please contact MICROSENSOR for customization.
3. For other special requirements, please contact MICROSENSOR and specify them in the order.