

# MPM288SA Pressure Sensor



## Features

- Standard voltage output signal
- $\Phi 19\text{mm}$  standard outer diameter, high interchangeability
- Wide power supply range
- No need for re-calibration for users, high precision
- Customizable dimensions
- Power reverse protection

## Application

- Medical devices
- Pressure transmitters
- Level measurement
- Smart pressure gauges
- Gas and liquid pressure measurement
- Flow meter matching

## Introduction

MPM288SA pressure sensor can convert pressure into standard electrical signal. It is composed of a PCBA circuit board with an ASIC chip and a standard  $\phi 19\text{mm}$  piezoresistive pressure sensor. It can be flexibly assembled or welded to various pressure connections for different on-site pressure measurement instruments.

MPM288SA pressure sensor can output different signals including the 3-wire (fixed) voltage output and the 3-wire ratio metric voltage output. Based on Micro Sensor's mature production process and signal conditioning technology, a pressure sensor-specific conditioning chip (ASIC) is utilized. Its digital processing part has dual 24-bit ADC, enabling high signal resolution for the product. The performance is stable and reliable after high and low temperature aging and wide temperature range compensation.

It features the same outline construction, mounting dimensions, and sealing method as international mainstream products, ensuring excellent interchangeability.

## Electrical Performance

- Range:  $-1\text{bar} \dots -0.35\text{bar} \sim 0\text{bar} \sim 0.35\text{bar} \dots 700\text{bar}$
- Pressure type: Gauge, Absolute, Sealed gauge
- Power supply: See output specifications for details
- Accuracy<sup>1)</sup>:  $\pm 0.25\% \text{FS} (\pm 0.5\% \text{FS} @ \text{FS} = 0.35\text{bar})$
- Insulation resistance:  $100\text{M}\Omega @ 50\text{V DC}$
- Dielectric strength:  $50\text{Hz}, 500\text{V AC}$
- Compensation temperature<sup>2)</sup>:  $0^\circ\text{C} \sim 70^\circ\text{C}$
- Operating temperature:  $-40^\circ\text{C} \sim 125^\circ\text{C}$
- Storage temperature:  $-40^\circ\text{C} \sim 125^\circ\text{C}$
- Vibration: No change at  $10\text{gRMS}, (20 \sim 2000)\text{Hz}$
- Shock:  $100\text{g}, 11\text{ms}$
- Overpressure:  $1.5 \times \text{FS}$  (Maximum  $\leq 1100\text{bar}$ )
- Burst pressure:  $3.0 \times \text{FS}$  (Maximum  $\leq 1400\text{bar}$ )

1)The test standard is based on JJG 860.

2)This is the compensation temperature for standard products. Please feel free to consult us for specific temperature requirements.

## Construction Performance

- Diaphragm: Stainless steel 316L
- Housing: Stainless steel 316L
- Vent tube: Stainless steel 304
- Wiring: Silicone wire
- O-ring: FKM
- Net weight: About 30g

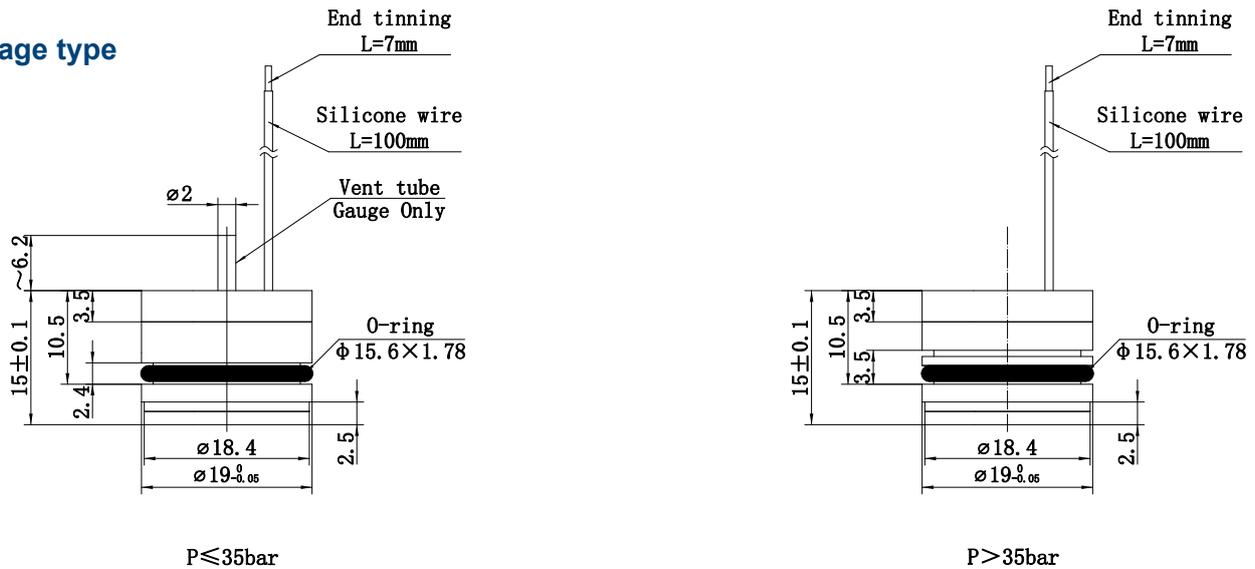
## Basic Conditions

- Medium temperature:  $(35\pm 1)^\circ\text{C}$
- Ambient temperature:  $(35\pm 1)^\circ\text{C}$
- Relative humidity:  $\leq 80\% \text{ RH}$
- Local air pressure:  $(0.86 \sim 1.06)\text{bar}$
- Power supply: 24V DC(8V ~ 28V DC), 5V DC  
( $5V\pm 0.3V \text{ DC}$ ), 3.3V DC( $3.3V\pm 0.3V \text{ DC}$ )
- Load resistance:  $\geq 10\text{k}\Omega$ (voltage type)

## Outline Construction

Unit: mm

### Voltage type

 $P \leq 35\text{bar}$  $P > 35\text{bar}$ The suggested installation dimension is  $\Phi 19^{+0.05}_{+0.02}\text{mm}$ ,  $L \geq 15\text{mm}$ 

## Output Specifications

Output signal	Supply voltage	Output format	Load resistance
0.5V ~ 4.5V DC	8V ~ 28V DC	3-wire	$\geq 10\text{k}\Omega$
0.5V ~ 4.5V DC	$5V\pm 0.3V \text{ DC}$		
0.5V ~ 2.5V DC	$3.3V\pm 0.3V \text{ DC}$		

## Electrical Connection

Color	3-wire
Red	+V
White	+OUT
Black	GND

## Order Guide

MPM288SA		Pressure Sensor					
Range code	Measuring range	Ref.	Range code	Measuring range	Ref.		
0A	0bar~0.35bar	G.A	12	0bar~20bar	G.A		
02	0bar~0.7bar	G.A	13	0bar~35bar	G.S.A		
03	0bar~1bar	G.A	14	0bar~70bar	S.A		
07	0bar~ 2bar	G.A	15	0bar~100bar	S.A		
08	0bar ~ 3.5bar	G.A	17	0bar~200bar	S.A		
09	0bar ~ 7bar	G.A	18	0bar~350bar	S.A		
10	0bar~10bar	G.A	19	0bar~700bar	S.A		
		Code	Pressure type				
		G	Gauge				
		A	Absolute				
		S	Sealed gauge				
		Code	Power supply				
		V1	24V DC				
		V6	5.0V DC				
		V7	3.3V DC				
		Code	Output signal				
		K1	0.5V ~ 4.5V DC				
		K3	0.5V ~ 4.5V DC(ratio metric,5.0V DC power supply only)				
		W	0.5V ~ 2.5V DC(3.3V DC power supply only)				
		Code	Electrical connection				
		2	100mm silicone flexible wire(default)				
		Code	Special measurement				
		Y	Gauge sensor to measure negative pressure (-1bar ~ -0.35bar)				
MPM288SA	07	G	V6	K3	2	Y	The whole spec

## Notes

1. The listed range is the standard range for the product. Please feel free to contact with us for special range requirements (including negative pressure type).
2. If the pressure sensor is fixed by a locking ring, the inner diameter of the locking ring should not be less than  $\Phi 15\text{mm}$ .
3. It is recommended to use a "suspended" construction when assembling the pressure sensor to avoid applying direct pressure to its end face during sealing, preventing any interference with the sensor's stability.
4. The operating temperature range is  $-20^{\circ}\text{C} \sim 250^{\circ}\text{C}$  for FKM O-ring by default. Please feel free to contact with us if the operating temperature range is lower than  $-20^{\circ}\text{C}$ , or if the sensor is used in harsh condition.