

# MPM283 Pressure Sensor



## Features

- Pressure range: 0kPa ~ 200kPa... 100MPa
- Gauge, Absolute and Sealed gauge
- Isolated construction, enable to test measure various fluid media
- $\Phi 12.6\text{mm}$  compact size OEM pressure sensor
- Stainless steel 316L or Hastelloy C materials
- Wide compensation temperature range  $-10^{\circ}\text{C} \sim 80^{\circ}\text{C}$
- MPM283 VI type thread :M14 $\times$ 1.5-6g

## Application

- Industrial process control
- Liquid level measurement
- Gas, liquid pressure measurement
- Pressure inspection meter
- Pressure calibrator
- Liquid pressure system and switches
- Cooling equipment and air conditioner
- Aviation and navigation inspection

## Introduction

MPM283 pressure sensor is OEM pressure sensor with stainless steel isolated diaphragm, the whole product has integrated construction, high endurance, high stability and good reliability, it can be used specially for middle and high pressure measurement. The measuring range of MPM283 VI : 0kPa ~ 10MPa...100MPa, small size, space saving, convenient and reliable threaded connection. The sensor using high accurate and stable pressure die, is produced on the advanced production line. Sensors are tested automatically, and compensated zero and temperature performance with provided resistors. The installation dimension is consistent with general products which makes the sensor has a good interchangeability.

## Electrical Performance

- Power supply:  $\leq 2.0\text{mA DC}$
- Electrical connection: Kovar pin or 100mm silicone wires
- Common mode voltage output: 50% of input (typ.)
- Input impedance:  $2\text{k}\Omega \sim 8\text{k}\Omega$
- Output impedance:  $3.5\text{k}\Omega \sim 6\text{k}\Omega$
- Response (10% ~ 90%):  $< 1\text{ms}$
- Insulated resistor:  $100\text{M}\Omega @ 100\text{V DC}$
- Overpressure: 2 times FS or 110MPa (min. value is valid)

## Construction Performance

- Diaphragm: Stainless steel 316L
- Housing: Stainless steel 316L
- Electrical connection: Kovar or Silicon rubber flexible wires
- O-ring: FKM
- Net weight:  $\sim 8\text{g}$
- Oil filling: Silicone oil

### Environment Condition

- Shock: No change at 10gRMS, (20 ~ 2000)Hz
- Impact: 100g, 11ms
- Media compatibility: The liquid or gas which is compatible with stainless steel and FKM

### Basic Condition

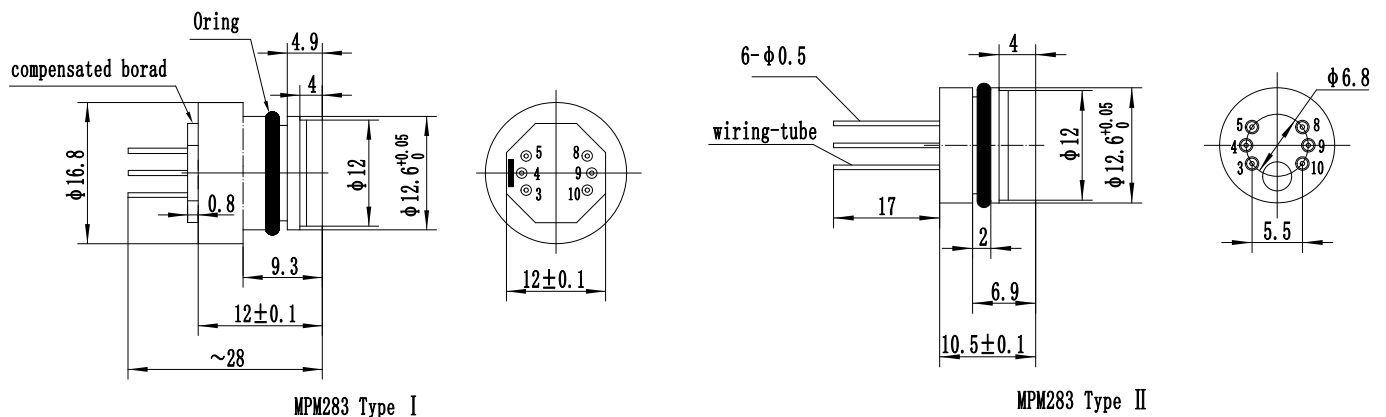
- Media temperature: (35±1)°C
- Environment temperature: (35±1)°C
- Shock: 0.1g (1m/s<sup>2</sup>) Max
- Humidity: (50±10)%RH
- Local air pressure: (86 ~ 106)kPa
- Power supply: (1.5±0.0015)mA DC

Item*	Min.	Typ.	Max.	Units
Pressure nonlinearity		±0.15	±0.25	%FS,BFSL
Pressure repeatability		±0.05	±0.075	%FS
Pressure hysteresis		±0.05	±0.075	%FS
Zero output			±3.0	mV DC
Output/Span**	70			mV DC
Zero thermal error		±0.75	±1.0	%FS, @35°C
Span thermal error		±0.75	±1.0	%FS, @35°C
Compensation temp. range***		-10 ~ 80		°C
Operating temp. range		-40 ~ 125		°C
Storage temp. range		-40 ~ 125		°C
Stability error		±0.1	±0.2	%FS/Year

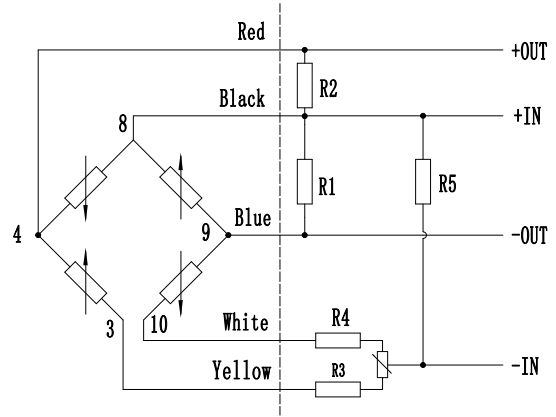
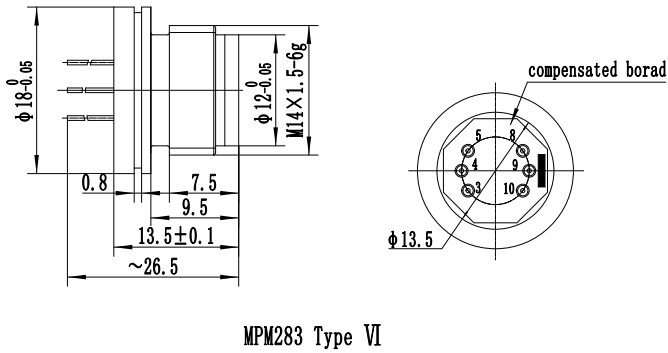
\*Testing at basic condition  
\*\*Output/Span=full scale output - zero point output  
\*\*\*P=200kPa compensation temp. range, 0°C ~70°C , @35°C

### Outline Construction

Unit: mm

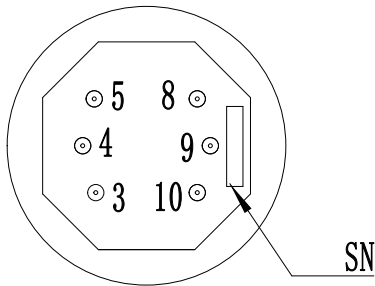


The suggested mounting dimension is  $\Phi 12.6^{+0.12}_{+0.08}$  mm



**Electrical Connection**

MPM283 I (L),MPM283 II (L),MPM283 VI (L)

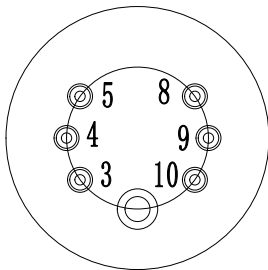


Pin	Range code 17/18/19/20		For other range	
	Definition	Wire color	Definition	Wire color
4	-OUT	Blue	+OUT	Red
5	-IN	Yellow	-IN	Yellow
8	+IN	Black	+IN	Black
9	+OUT	Red	-OUT	Blue

**Notes**

1. The resistance bridge on the left of the dashed is sensing die's bridge circuit.
2. If the sensor has no compensated board, it is needed to connect outer compensated resistor to compensate zero and temperature drift, the connection to see the above chart. Connect zero calibrated resistor R3 (R4), the other resistor R4 (R3) is short circuit as negative power supply; R1 or R2 is zero temperature compensated resistor, only one of them is used, the other is open circuit. The user could select according the specification label which is enclosed with pressure sensor; R5 is sensitivity compensated resistors. We suggest that please connect the outer compensated resistors with pressure sensor as close as possible.

MPM283 I (M),MPM283 II (M),MPM283 VI (M)



Pin	Range code 17/18/19/20		For other range	
	Definition	Wire color	Definition	Wire color
3	-IN	Yellow	-IN	Yellow
4	-OUT	Blue	+OUT	Red
8	+IN	Black	+IN	Black
9	+OUT	Red	-OUT	Blue
10	-IN	White	-IN	White

## Order Guide

## MPM283 II -15-A-F-L-1

Code	Assembling type
MPM283 I	With cap $\Phi$ 16.8 mm Range:0kPa ~ 200kPa...100MPa
MPM283 II	$\Phi$ 12.6 $\times$ 10.5 mm Range:0kPa ~ 200kPa...100MPa
MPM283 VI	M14 $\times$ 1.5-6g Range:0kPa ~ 10MPa...100MPa

Range code	Pressure range	Ref.
07	0kPa~200kPa	G.A
08	0kPa~350kPa	G.A
09	0kPa~700kPa	G.A
10	0kPa~1MPa	G.A
12	0kPa~2MPa	G.A
13	0kPa~3.5MPa	G.A.S
14	0kPa~7MPa	S.A
15	0kPa~10MPa	S.A
17	0kPa~20MPa	S.A
18	0kPa~35MPa	S.A
19	0kPa~70MPa	S.A
20	0kPa~100MPa	S.A

Code	Electrical connection
1	Kovar pin
2	100mm silicone wires

Code	Compensation
L	1.5mA excitation
M	Temperature compensating resistance (default 1.5mA excitation)

Code	Sealing mode
0	Null (MPM283 VI )
F	FKM O-ring (MPM283 I /MPM283 II )

Code	Pressure type
G	Gauge
A	Absolute
S	Sealed gauge

## Notes

1. The default unit of all the products is kPa (1kPa=0.01bar).
2. Please pay attention to protect the diaphragm to prevent sensor from damaging.
3. Please do not pull or drag the Kovar pin or flexible leading wires.
4. The FKM O-ring of sensing element could bear the temperature with range of -20 $^{\circ}$ C ~250 $^{\circ}$ C . If the operating temperature of sensing element is lower than-20  $^{\circ}$ C or the element is applied in critical environment, please contact us.

## ООО "РусАвтоматизация"