MPM283 Pressure Sensor

Features

- Pressure range: 0kPa ~ 200kPa… 100MPa
- Gauge, Absolute and Sealed gauge
- Isolated construction, suitable for various fluids
- Φ12.6mm compact size OEM pressure sensor
- Stainless steel 316L or Hastelloy C materials
- Wide compensation temperature range -10℃ ~80℃
- MPM283 VI threaded :M14×1.5-6g

Applications

- Industrial process control
- Level measurement
- Gas, liquid pressure measurement
- Pressure gauge
- Pressure calibrator
- Hydraulic system and switches
- HVAC system
- Aviation and navigation inspection

Introduction

MPM283 Pressure Sensor is an OEM sensitive element with a stainless steel isolated diaphragm. It features an integrated construction, high overpressure, and long-term stability, suitable for measurement of medium and high pressures. The MPM283 VI Pressure Sensor has a measuring range of 0kPa ~ 10MPa...100MPa, with a compact size and threaded connection. MPM283 Pressure Sensor utilizes a piezoresistive pressure sensor die, and is assembled on the advanced production line. It undergoes automated testing, with zero adjustment and temperature compensation, ensuring stable, reliable performance.

Electrical Performance

- Power supply: ≤ 2.0mA DC
- Electrical connection: Kovar pin or 100mm silicone wires
- Common mode voltage output: 50% of input (typ.)
- Input impedance: 2kΩ ~ 8kΩ
- Output impedance: 3.5kΩ ~ 6kΩ
- Response time (10% ~ 90%): < 1ms
- Insulation resistance: 100MΩ@100V DC
- Overpressure: 2 times FS or 110MPa (min. value is valid)

Construction Performance

- Diaphragm: Stainless steel 316L
- Housing: Stainless steel 316L
- Pin: Kovar
- O-ring: FKM
- Net weight: ~8g
- Oil filling: Silicone oil

Environmental Conditions

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

Basic Conditions

- Medium temperature: (35±1)℃
- Ambient temperature: (35±1)℃
- Vibration: 0.1g (1m/s^2) Max
- Humidity: (50±10)%RH
- Ambient pressure: (86 ~ 106)kPa
- Power supply: (1.5±0.0015)mA DC

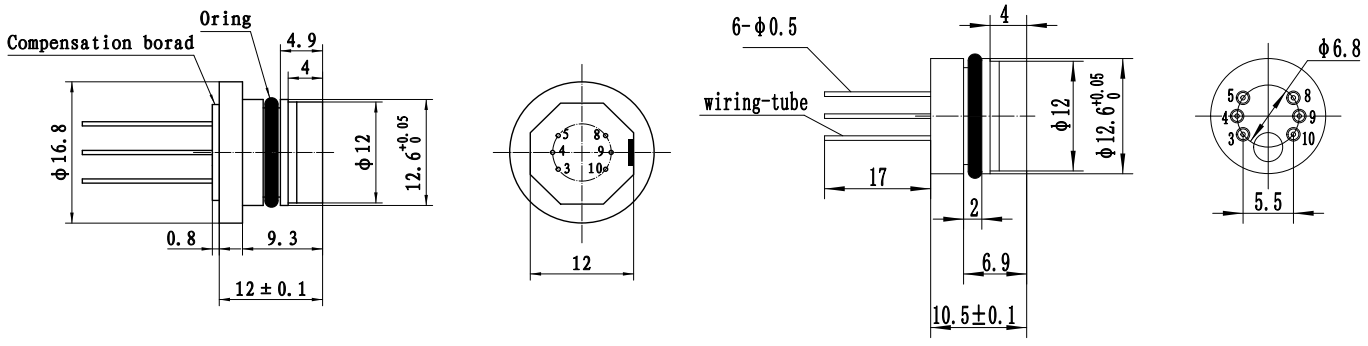
Specifications

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℃
Span thermal error		±0.75	±1.0	%FS, @35℃
Compensation temp. range***	-10 ~ 80			℃
Operating temp. range	-40 ~ 125			℃
Storage temp. range	-40 ~ 125			℃
Long-term 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℃ ~70℃ , @35℃

Outline Construction

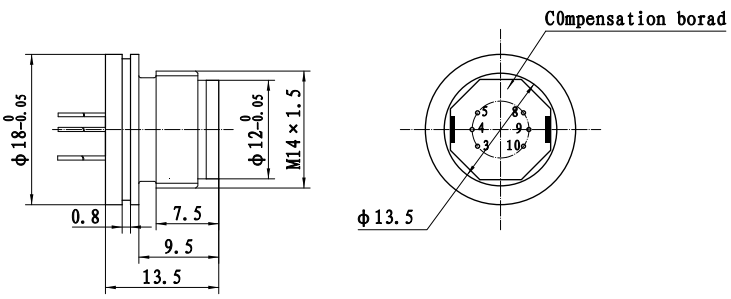
Unit: mm



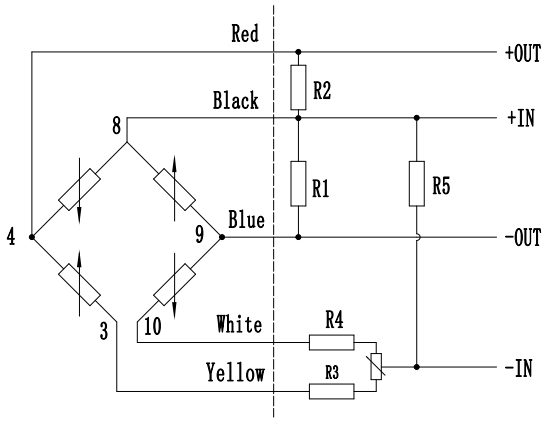
MPM283 Type Ⅰ

MPM283 Type Ⅱ

The recommended installation dimension is $\Phi 12.6^{+0.12}_{+0.08}$ mm

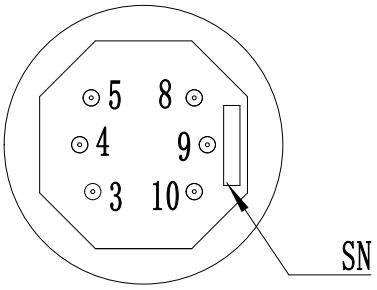


MPM283 Type VI



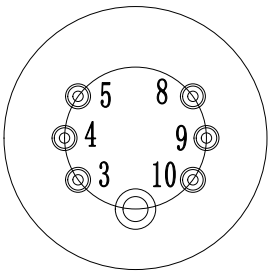
Electrical Connection

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



Pin	Range code 17/18/19/20		Other range codes	
	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

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



Pin	Range code 17/18/19/20		Other range codes	
	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

Notes

1. The arrow-marked resistor bridge to the left of the dashed line is the bridge circuit of the die.
2. Please check the specification label enclosed with the products for the actual electrical connection method.
3. MDM283 M Pressure Sensor requires external resistors for zero and temperature drift compensation (as shown in the figure). The zero adjustment resistor (R3 or R4) is connected, with the other resistor (R4 or R3) shorted to serve as the power supply negative terminal. R1 or R2 is the zero temperature drift compensation resistor, with only one needed, and the other left open, as specified in the specification label. R5 is the sensitivity temperature compensation resistor. For optimal performance, external compensation resistors should be placed as close to the differential pressure sensor as possible.

Order Guide

MPM283 Ⅱ -15-A-F-L-1

Code	Assembling type
MPM283 Ⅰ	With mounting ring Φ16.8 mm Range:0kPa ~ 200kPa…100MPa
MPM283 Ⅱ	Φ12.6×10.5 mm Range:0kPa ~ 200kPa…100MPa
MPM283 VI	M14×1.5-6g 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	0MPa~1MPa	G.A
12	0MPa~2MPa	G.A
13	0MPa~3.5MPa	G.A.S
14	0MPa~7MPa	S.A
15	0MPa~10MPa	S.A
17	0MPa~20MPa	S.A
18	0MPa~35MPa	S.A
19	0MPa~70MPa	S.A
20	0MPa~100MPa	S.A

Code	Electrical connection
1	Kovar pin
2	100mm silicone wires

Code	Compensation
L	Temperature compensation(1.5mA excitation)
M	Compensation resistor(1.5mA excitation)

Code	Sealing
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 the product is kPa. 1kPa=0.01bar.
2. Protect the isolated diaphragm and ceramic circuit board to prevent any damage or low performance.
3. Do not pull on the pin wires.
4. The FKM O-ring of sensor has a temperature range of -20°C~250°C by default. For operating temperature below -20°C or harsh media, please contact the MICROSENSOR.