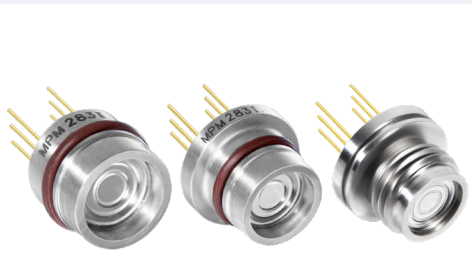
MPM283 Pressure Sensor



Features

- Pressure range: 0bar ~ 2.0bar…1000bar
- Gauge, Absolute and Sealed gauge
- Isolated construction, enable to test measure various fluid media
- Φ12.6mm compact size OEM pressure sensor
- Stainless steel 316L or Hastelloy C materials
- Wide temperature compensation range -10℃ ~80℃
- MPM283 VI type thread :M14×1.5

Application

- Industrial process control
- Level measurement
- Gas, liquid pressure measurement
- Pressure inspection meter
- Pressure calibrator
- Liquid pressure system and switch
- 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 : 0bar ~ 100bar…1000bar, 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: ≤ 2.0mA DC
- Electrical connection: Kovar pin or 100mm silicon rubber flexible wires
- Common mode voltage output: 50% of input (typ.)
- Input impedance: 2kΩ ~ 8kΩ
- Output impedance: 3.5kΩ ~ 6kΩ
- Response (10% ~ 90%): < 1ms
- Insulated resistor: 100MΩ@100V DC
- Overpressure: 2 times FS or 1100bar (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: ~8g

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)℃
- Environment temperature: (35±1)℃
- Shock: 0.1g (1m/s^2) Max
- Humidity: (50±10)%RH
- Local air pressure: (0.86 ~ 1.06)bar
- Power supply: (1.5±0.0015)mA DC

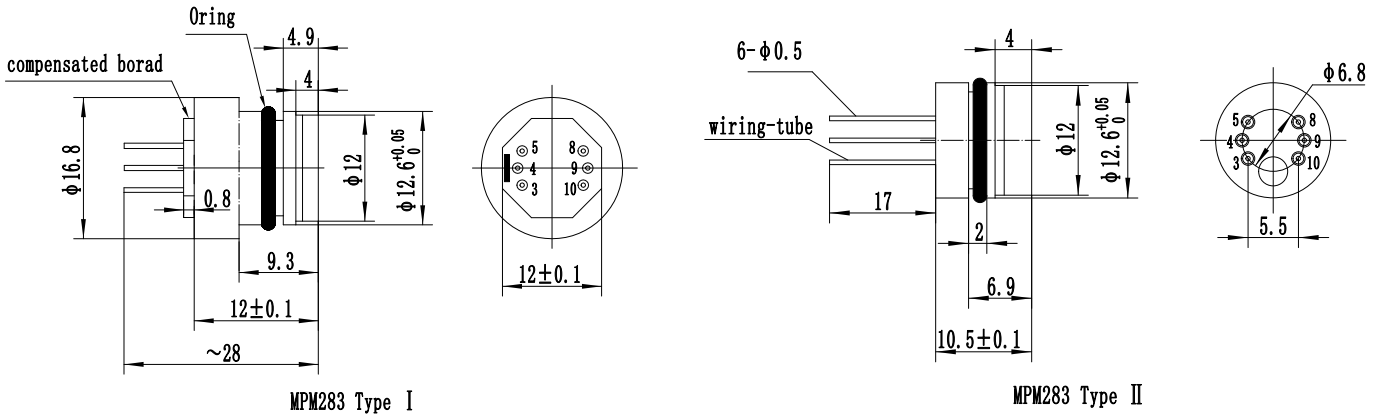
Specification

Item*	Min.	Typ.	Max.	Units
Linearity		±0.15	±0.25	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
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℃
Compensated temp. range***	-10 ~ 80			℃
Working temp. range	-40 ~ 125			℃
Storage temp. range	-40 ~ 125			℃
Long-term stability		±0.1	±0.2	%FS/Year

*testing at basic condition
**Output/Span=full scale output - zero point output
***2.0bar compensated temp. range, 0℃ ~70℃ , @35℃

Outline Construction

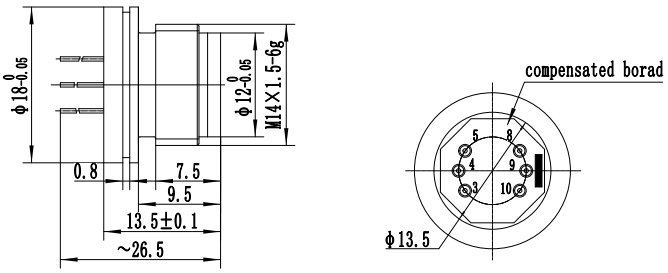
Unit: mm



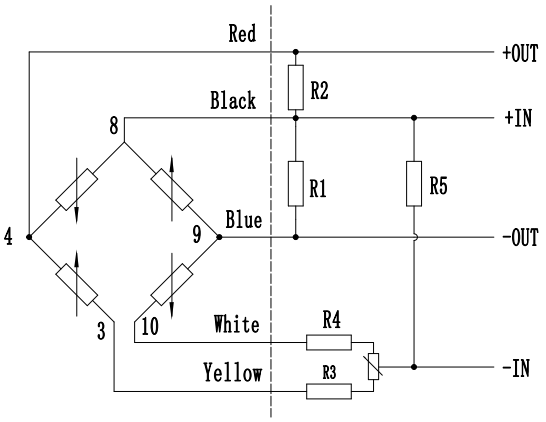
MPM283 Type Ⅰ

MPM283 Type Ⅱ

The suggested mounting dimension is Φ12.6 $^{+0.12}_{+0.08}$ mm

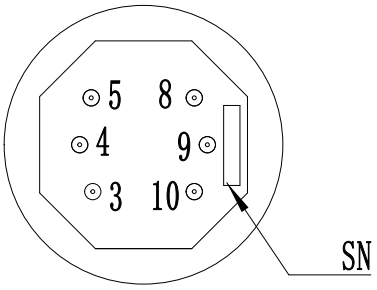


MPM283 Type VI



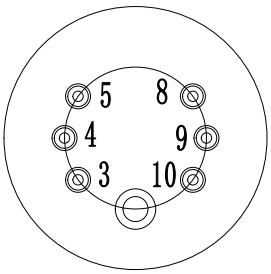
Electrical Connection

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



Pin	Range code 17/18/19/20		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

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

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.

Order Guide

MPM283	Pressure Sensor

Code	Assembling type
Ⅰ	with cap Φ16.8 mm (range:0bar ~ 2.0bar…1000bar)
Ⅱ	Φ12.6×10.5 mm (range:0bar ~ 2.0bar…1000bar)
Ⅵ	M14×1.5 (range:0bar ~ 100bar…1000bar)

Range code	Pressure range	Pressure type
07	0bar ~ 2bar	G, A
08	0bar ~ 3.5bar	G, A
09	0bar ~ 7bar	G, A
10	0bar ~ 10bar	G, A
12	0bar ~ 20bar	G, A
13	0bar ~ 35bar	G, S, A
14	0bar ~ 70bar	S, A
15	0bar ~ 100bar	S, A
17	0bar ~ 200bar	S, A
18	0bar ~ 350bar	S, A
19	0bar ~ 700bar	S, A
20	0bar ~ 1000bar	S, A

Code	Pressure type
G	Gauge
A	Absolute
S	Sealed gauge

Code	Temperature compensated type
L	With compensated circuit board
M	Outer compensated resistor (providing resistor value)

Code	Electrical connection
1	Kovar pin
2*	100mm silicon rubber flexible wires

MPM283	Ⅱ	17	S	L	2	the whole spec

*The default code for electrical connection is “1”on the parameter card. And it is also allowed to print code “1” if the electrical connection is flexible wire (original code “2”). The wire length shall be as per customers’ request on the contact.

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 ℃ ~250 ℃ . If the working temperature of sensing element is lower than-20℃ or the element is applied in critical environment, please contact us.