

MPM283 Piezoresistive OEM Pressure Sensor

Features

- Pressure range: 0~0.7MPa...100MPa
- Gauge, absolute and sealed gauge
- Constant current power supply
- Isolated construction, enable to test various media
- Φ12.6mm compact size OEM pressure sensor
- Full stainless steel 316L
- Wider temperature compensation range -10°C~+80°C



Application

- Industrial process control
- Level measure
- Gas, liquid pressure measure
- Pressure inspection meter
- Pressure calibrator
- Liquid pressure system and switch
- Cooling equipment and air conditioner
- Aviation and navigation inspection

Introduction

MPM283 piezoresistive pressure sensor is OEM pressure sensor with stainless steel isolated diaphragm, the whole product has integrated construction, high endurance, stable and reliable, it can be used specially for middle and high pressure measurement. The sensor uses high accurate and stable pressure die, been produced on the advanced production line. Sensors are tested automatically, and compensated zero and temperature performance. With identical mounting dimension, the sensors are widely used for chemi-industry, process control, liquid pressure system and switch, etc.

Electric Performance

- Power supply: $\leq 2.0\text{mA DC}$
- Electric connection: Kovar pin or 100mm silicon rubber flexible wires
- Common mode voltage output: 50% of input (typ.)
- Input impedance: $3\text{k}\Omega \sim 8\text{k}\Omega$
- Output impedance: $3.5\text{k}\Omega \sim 6\text{k}\Omega$
- Response (10%~90%): $< 1\text{ms}$
- Insulated resistor: $100\text{M}\Omega$, 100VDC
- Overpressure: 1.5 time FS or 110MPa, (min. value is valid)

Construction Performance

- Diaphragm: stainless steel 316L

<http://www.microsensor.cn>

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Housing: stainless steel 316L
 Pin: Kovar or silicon rubber flexible wires
 O-ring: Viton
 Net weight: ~8g

Environment Condition

Position effect: deviate 90° from any orientation, zero change $\leq 0.1\%FS$
 Shock: no change at 10gRMS, (20~2000) Hz
 Impact: 100g, 11ms
 Media compatibility: the liquid or gas which is compatible with stainless steel and Viton

Basic Condition

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

Basic Specification

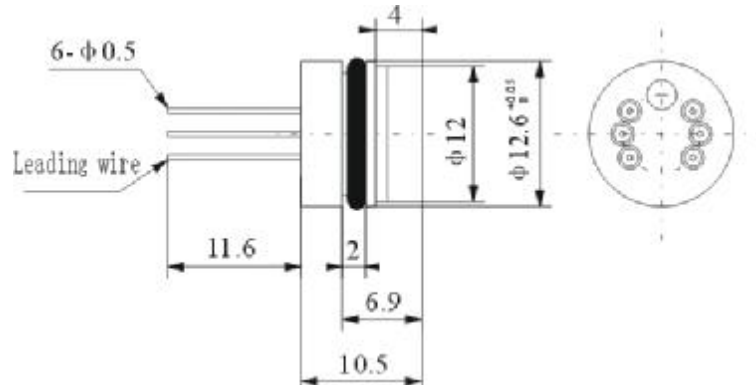
Specification*	Min.	Typ.	Max.	Units
Linearity **		±0.2	±0.25	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
Hysteresis		±0.05	±0.075	%FS
Zero output			±3	mVDC
FS output	70			mVDC
Zero thermal error		±0.75	±1.0	%FS, @35°C
Span thermal error		±0.75	±1.0	%FS, @35°C
Compensated temp. range		-10~80		°C
Working temp. range		-40~125		°C
Storage temp. range		-40~125		°C
Stability		±0.1	±0.2	%FS/year

* testing at basic condition

** 100MPa pressure sensor's linearity: typ. ±0.30, max. ±0.35(units ±%FS,BFSL)

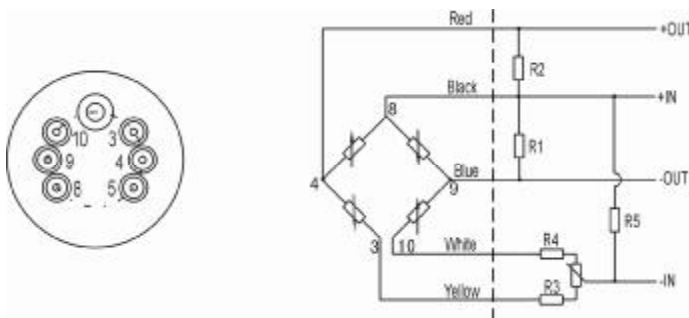
Outline Construction

(units: mm)



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

Electric Connection



Pin	Connection	Wire color
8	(+IN)	Black
3	(-IN)	Yellow
10	(-IN)	White
4	(+OUT)	Red
9	(-OUT)	Blue
The other pins are useless		

1. The resistance bridge on the left of the dashed is sensing die's bridge circuit;
2. 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.

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Order Guide

MPM283	Piezoresistive OEM Pressure Sensor					
	Code	Assembling type				
	II	Φ12.6×10.5				
		Range code	Pressure range	Pressure type		
		09	0~700kPa	G.A		
		10	0~1000kPa	G.A		
		12	0~2MPa	G.A		
		13	0~3.5MPa	G.S.A		
		14	0~7MPa	S		
		15	0~10MPa	S		
		17	0~20MPa	S		
		18	0~35MPa	S		
		19	0~70MPa	S		
		20	0~100MPa	S		
			Code	Pressure type		
			G	Gauge		
			A	Absolute		
			S	Sealed gauge		
				Code	Temperature compensated type	
				M	Compensated by outer resistors (we provide the resistors and value)	
					Code	Electric connection
					1	Kovar
					2	5-color 100mm silicon rubber flexible wires
MPM283	II	17	S	M	2	the whole spec

Order Note

1. Please pay attention that the real measured pressure should be less than 80% of full scale;
2. Please pay attention to protect the diaphragm to prevent sensor from damaging;
3. Please do not pull or drag pressure sensor's pin or flexible wires;

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