MPM280 Anti-corrosive Pressure Sensor

Features

- Pressure range: 0kPa~ 70kPa…70MPa
- Gauge, Absolute and Sealed gauge
- Constant current or constant voltage power supply for option
- Isolated construction to measure various fluid media
- Φ19mm OEM pressure sensor
- Different metals with excellent corrosion resistance for option
- Withstand vacuum pressure, minimum -0.1MPa

Applications

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

Introduction

MPM280TH pressure sensor has the same outline, dimensions, and sealing as the standard MPM280 Pressure Sensor. With a Ta1 tantalum diaphragm and Hastelloy C-276 housing, it features radial sealing with an FKM O-ring and is suitable for measuring pressure in highly corrosive media. The range is 0kPa~70kPa…35MPa.

MPM280TS pressure sensor has the same outline, dimensions, and sealing as the standard MPM280 Pressure Sensor. With a Ta1 tantalum diaphragm and stainless steel 316L housing, it features radial sealing with an FKM O-ring and is suitable for measuring pressure in corrosive media.The range is 0kPa~70kPa…35MPa.

MPM280HH pressure sensor has the same outline, dimensions, and sealing as the standard MPM280 Pressure Sensor. With fully Hastelloy C-276 construction, it features radial sealing with an FKM O-ring. It is suitable for measuring pressure in highly corrosive media. The range is 0kPa~70kPa…35MPa.

MPM280Ti pressure sensor has the same outline, dimensions, and sealing as the standard MPM280 Pressure Sensor. It uses a new titanium alloy, with a TC4 housing and a TA1 diaphragm. It is ideal for measuring pressure in seawater or highly corrosive media. The range is 0kPa~70kPa…70MPa.

MPM 280Ti Pressure Sensor performs well in humid and seawater environments, offering superior corrosion resistance to stainless steel. It resists pitting, acid corrosion, and stress corrosion, and is highly resistant to alkalis, chlorides, organic chlorides, nitric acid, sulfuric acid, and other corrosive media.

Electrical Performance

- Power supply: ≤2.0mA DC
- Electrical connection: φ0.5mm Kovar pin or 100mm silicone wires
- Common mode voltage output: 50% of input (typ.)
- Input impedance: 3kΩ~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

Model	Diaphragm	Housing
MPM280TH	Tantalum Ta1	Hastelloy C-276
MPM280TS	Tantalum Ta1	Stainless steel 316L
MPM280HH	Hastelloy C-276	Hastelloy C-276
MPM280Ti	Titanium TA1	Titanium alloy TC4

- Vent tube: Stainless steel 316L
- Pin: Kovar
- O-ring: FKM
- Net weight: ~23g(MPM280TH, MPM280TS, MPM280HH)
  ~13.5g (MPM 280Ti)
- Oil filling: Silicone oil

Environment Conditions

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

Basic Conditions

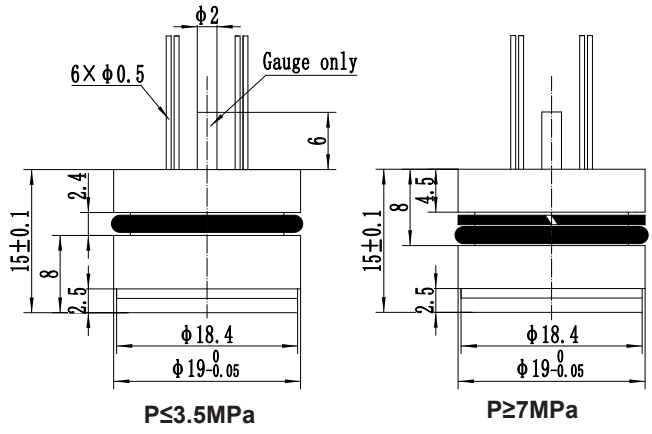
- Medium temperature: (25±1)℃
- Ambient temperature: (25±1)℃
- Vibration: 0.1g (1m/s^2) Max
- Humidity: (50±10)%RH
- Ambient pressure: (86~106)kPa
- Power supply: (1.5±0.0015)mA DC

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		±1.0	±2.0	mV DC
Output/Span**	70			mV DC
Zero thermal error		±0.75	±1.0	%FS, @25℃
FS thermal error		±0.75	±1.0	%FS, @25℃
Compensation temp. range	0~50			℃
Operating temp. range	-40~125			℃
Storage temp. range	-40~125			℃
Long-term stability error		±0.2	±0.3	%FS/Year

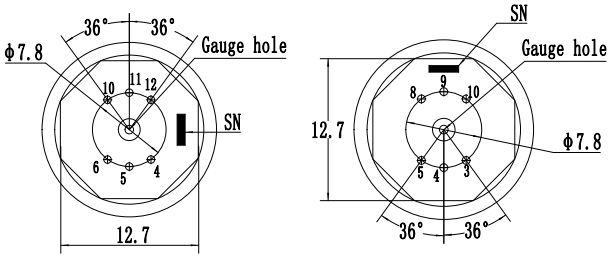
*Testing at basic condition,G: Gauge, A: Absolute, S: Sealed gauge.
** Output/Span=full scale output - zero point.
70kPa A, 1.0bar A, FS output ≥45mV DC.
200kPa A, 350kPa A, FS output ≥60mV DC.

Outline Construction (Unit: mm)



P≤3.5MPa　　P≥7MPa

Electrical Connection



The recommended installation dimension is $\Phi 19^{+0.05}_{+0.02}$ mm.

Pin	Definition	Wire color
4	+OUT	Red
5	+IN	Black
6	-IN	Yellow or White
10	-OUT	Blue
Other pins are not used		

Pin	Definition	Wire color
4	+OUT	Red
5	-IN	Yellow or White
8	+IN	Black
9	-OUT	Blue
Other pins are not used		

Pin	Definition	Wire color
4	-OUT	Blue
5	-IN	Yellow or White
8	+IN	Black
9	+OUT	Red
Other pins are not used		

Notes

Please check the specification label enclosed with the products for the actual electrical connection method.

Order Guide

MPM280TH-08-G-F-L-1-P

Code
MPM280TH
MPM280TS
MPM280HH
MPM280Ti

Range code	Pressure range	Ref.
02	0kPa~70kPa	G.A
03	0kPa~100kPa	G.A
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

Code	Potting
P	No potting
RTV	Potting with silicone RTV gel

Code	Electrical connection
1	Kovar pin
2	100mm silicone wires

Code	Compensation
L	Temperature compensation (1.5mA excitation)
M	Without temperature compensation

Code	Sealing
0	Null
F	FKM O-ring

Code	Pressure type
G	Gauge
A	Absolute
S	Sealed gauge

Notes

1. The default unit of the product is kPa. 1kPa=0.01bar.
2. It is recommended that the sensor be assembled as a "suspended" construction to avoid direct pressure on its face and affecting sensor stability.
3. Protect the isolated diaphragm to prevent any damage or low performance.
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.