

MPM280 Anti-corrosive Pressure Sensor



Features

- Pressure range: 0bar ~ 1.0bar...700bar
- Gauge, Absolute and Sealed gauge
- Constant current or Constant voltage power supply for option
- Isolated construction to measure various fluid media
- $\Phi 19\text{mm}$ OEM pressure element
- Different metals with excellent corrosion resistance for option
- Tnegative pressure measurement is available, the lowest to around -1bar

Application

- Industrial process control
- Level measurement
- Gas, Liquid pressure measurement
- Pressure meter
- Pressure calibrator
- Liquid pressure system and switch
- Refrigeration equipment and Air conditioner
- Aviation and Navigation inspection

Introduction

MPM280TH pressure sensor has similar outline, installation dimension and sealing methods as general MPM280 pressure sensor. For construction material, the isolated diagram uses tantalum material and housing uses Hastelloy C material. The sensor is sealed by FKM O-ring. It can be used to measure strongly corrosive media. The pressure range is -1.0bar~0bar~1.0bar...350bar.

MPM280TS pressure sensor has similar outline, installation dimension and sealing methods as general MPM280 pressure sensor. For construction material, the isolated diagram uses tantalum material and housing uses stainless steel 316L material. The sensor is sealed by FKM O-ring. It can be used to measure strongly corrosive media. The pressure range is -1.0bar~0bar~1.0bar...350bar.

MPM280HH pressure sensor has similar outline, installation dimension and sealing methods as general MPM280 pressure sensor. It uses all Hastelloy C material in construction, The sensor is sealed by FKM O-ring. It can be used to measure strongly corrosive media. The pressure range is -1.0bar~0bar~1bar...350bar.

MPM280Ti pressure sensor has similar outline, installation dimension and sealing methods as general MPM280 pressure sensor. It uses all titanium material in construction, TC4 housing material and TA1 diaphragm. It can be used to measure sea water or corrosive media. The pressure range is -1.0bar~0bar~1.0bar...700bar.

MPM 280Ti Pressure Sensor can be used in wet environment or sea water. Its anti-corrosive performance is far better than stainless steel. MPM280Ti has good anti-corrosive performance for pitting, acid etching, stress corrosion, alkali, chloride, chlorine-organism, nitric acid and vitrioletc.

Electrical Performance

- Power supply: $\leq 2.0\text{mA DC}$
- Electrical connection: $\phi 0.5\text{mm}$ 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%): $< 1\text{ms}$
- Insulation resistor: $100\text{M}\Omega @ 100\text{V DC}$
- Overpressure: 2 times FS or 1100bar(min. value is valid)

Construction Performance

- Diaphragm: Titanium (MPM280Ti)
Tantalum (MPM280TH, MPM280TS)
Hastelloy C(MPM280HH)
- Housing: Titanium (MPM280Ti)
Hastelloy C(MPM280TH, MPM280HH)
- Pressure leading tube: Stainless steel 316L
- Pin: Kovar
- O-ring: FKM
- Net weight: ~23g(general type, MPM280TH, MPM280TS and MPM280HH)
~13.5g (MPM 280Ti)

Environment Condition

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

Basic Condition

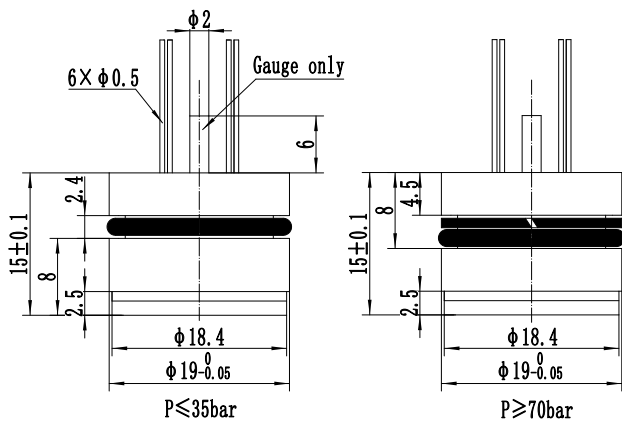
- Media temperature: (25±1)°C
- Environment temperature: (25±1)°C
- Shock: 0.1g (1m/s²) Max
- Humidity: (50±10)%RH
- Local air pressure: (0.86~1.06)bar
- Power supply: (1.5±0.0015)mA DC

Specification

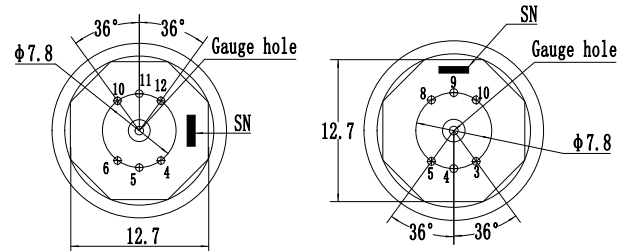
Item*	Min.	Typ.	Max.	Units
Linearity		±0.15	±0.25	%FS,BFSL
Repeatability		±0.05	±0.075	%FS
Hysteresis		±0.05	±0.075	%FS
Zero output		±1.0	±2.0	mV DC
Output/Span**	70			mV DC
Zero thermal error		±0.75	±1.0	%FS, @25°C
FS thermal error		±0.75	±1.0	%FS, @25°C
Compensated temp. range		0~50		°C
Working temp. range		-40~125		°C
Storage temp. range		-40~125		°C
Long-term stability		±0.2	±0.3	%FS/Year

*Testing at basic condition, G: Gauge; A: Absolute; S: Sealed gauge
 ** Output/Span=full scale output - zero point
 0.7bar A, 1.0bar A, 0.7bar GY, 1.0bar GY, FS output ≥45mV
 2.0bar A, 3.5bar A, 2.0bar GY, 3.5bar GY, FS output ≥60mV

Outline Construction (Unit: mm)



Electrical Connection



For option 0 or null, suggested 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 useless		

Pin	Definition	Wire color
4	+OUT	Red
5	-IN	Yellow or White
8	+IN	Black
9	-OUT	Blue
Other pins are useless		

Pin	Definition	Wire color
4	-OUT	Blue
5	-IN	Yellow or White
8	+IN	Black
9	+OUT	Red
Other pins are useless		

Notes

The actual electrical connection method, please check the parameter label enclosed with products.

Order Guide

MPM280		Anti-corrosive Pressure Sensor					
MPM280TH	code	range	Ref.	Range code	range	Ref.	
MPM280TS	02	0bar~0.7bar	G.A	13	0bar~35bar	G.S.A	
MPM280HH	03	0bar~1bar	G.A	14	0bar~70bar	S.A	
MPM280Ti	07	0bar~2bar	G.A	15	0bar~100bar	S.A	
		08	0bar~3.5bar	G.A	17	0bar~200bar	S.A
		09	0bar~7bar	G.A	18	0bar~350bar	S.A
		10	0bar~10bar	G.A	19	0bar~700bar	S.A
		12	0bar~20bar	G.A			
		Code	Pressure type				
		G	Gauge				
		A	Absolute				
		S	Sealed gauge				
		Code	Pressure connection				
		0 or null	O-ring				
		Code	Compensation				
		L	Laser trimming				
		M	Outer compensated resistor (providing resistor value)				
		Code	Electrical connection				
		1	Kovar pin(default)				
		2*	100mm silicon rubber flexible wires				
		Code	Special measurement				
		Y	Gauge sensor to measure vacuum (-1bar ~ 0bar)				
MPM280HH	09	G	0	L	1	Y	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 the company's products is kPa, 1kPa=0.01bar.
2. It is recommended that the sensor should be installed as Suspended Mode to avoid face tight press and avoid affecting sensor stability.
3. Please pay attention to protect the diaphragm and the compensated board to prevent any damage or bad performance.
4. Temperature resistant range of standard FKM O-ring of sensor is -20 °C ~250 °C . When working temperature is lower than -20 °C , or sensor is applied in critical environment, please contact us.