MPM280Au Pressure Sensor

Features

- Pressure range: -1bar…0bar ~ 0.35bar…200bar
- Gauge / sealed gauge / absolute
- Isolated structure, Suitable for hydrogen pressure measurement
- Φ19mm OEM pressure element
- Corrugated diaphragm with gold plated

Application

- Hydrogen pressure measurement instrument
- Hydrogen production and purification equipment
- Hydrogen storage and transportation equipment

Introduction

MPM280Au pressure sensing element is a measuring element specially developed for hydrogen measurement applications. The sensor is flat membrane structure and adopts gold plating techniques on the membrane to effectively prevent “hydrogen embrittlement" and "hydrogen penetration". It improves the working life of the sensor as well as ensure the site safety.

MPM280Au pressure sensor selects the high-precision and high-stability diffusion silicon piezoresistive pressure sensitive chip produced by famous international manufacturer. The pressure sensitive component is automatically tested by computer and fabricated with zero point correction and temperature compensation. With high accuracy and good stability, it can be widely used in various hydrogen pressure measurement applications.

Electrical Performance

- Power supply: ≤ 2.0mA DC
- Electrical connection: Φ0.5mm gold-plated Kovar pin or 100mm flexible silicone rubber wires
- Common mode voltage output: 50% of the input (typ.)
- Input impedance: 3kΩ ~ 8kΩ
- Output impedance: 3.5kΩ ~ 6kΩ
- Response time (10% ~ 90%): <1ms
- Insulation resistor: 100MΩ@100V DC
- Overload: 2 times FS

Construction Performance

- Diaphragm: Stainless steel 316L with gold plated
- Housing: Stainless steel 316L
- Vented tube: Stainless steel 316L
- Pin: Gold-plated Kovar
- Net weight: ~ 16g

Environment Condition

- Shock: No change at 10gRMS,(20~2000)Hz
- Impact: 100g, 11ms
- Media compatibility: High purity hydrogen or mixed gas with high hydrogen content

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)mADC

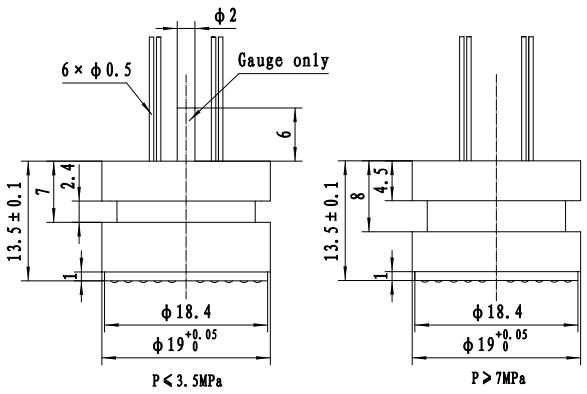
Specification

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
FS output	60			mV DC
Zero thermal error***		±0.75	±1.0	%FS, @35℃
FS thermal error		±0.75	±1.0	%FS, @35℃
Compensated temp. range	0~70			℃
Working temp. range	-40~125			℃
Storage temp. range	-40~125			℃
Long-term stability		±0.2	±0.3	%FS/year

* Testing at basic condition, G: Gauge; A: Absolute; S: Sealed gauge;
** For range code 0AG, Linearity ≤ ±0.3%FS;
*** For range code 0A, Zero thermal error ≤ 1.5%FS.

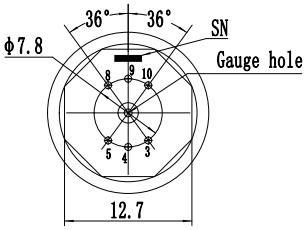
Outline Construction

(Unit: mm)



The suggested installation dimension is Φ19 $^{+0.05}_{+0.02}$ mm

Electrical Connection



Pin	For range 02G/03G/17		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

Order Guide

MPM280Au	Pressure Sensor					
	Code	Range	Ref.	Range code	Range	Ref.
	0A	0bar~0.35bar	G.A	10	0bar~10bar	G.A
	02	0bar~0.70bar	G.A	12	0bar~20bar	G.A
	03	0bar~1bar	G.A	13	0bar~35bar	G.S.A
	07	0bar~2bar	G.A	14	0bar~70bar	S.A
	08	0bar~3.5bar	G.A	15	0bar~100bar	S.A
	09	0bar~7bar	G.A	17	0bar~200bar	S.A

Code	Pressure type
G	Gauge
A	Absolute
S	Sealed gauge

Code	Compensation
L	Laser trimming
M	Outer compensated resistor (providing resistor value)

Code	Electrical connection
1	Kovar pin(default)
2*	100mm flexible silicone rubber wires

Code	Special measurement
Y	Gauge sensor to measure Vacuum (0bar ~ 1bar)

MPM280Au	09	G	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. Please pay attention to protect the diaphragm and the compensated board to prevent any damage or bad performance;
2. It can be used for pressure higher or lower than the range code, but generally needs to be controlled within ±30%FS;
3. Please check the maximum overload of the system before using the product. The maximum overload of the system should be smaller than the maximum overload of the product. Otherwise, the performance and service life of the product will be affected, and even the product will be damaged.