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Датчик давления МРМ280. Технические характеристики.



MPM280 Hygienic Pressure Sensor

Introduction

MPM280 Hygienic pressure sensor is a pressure sensing element through male thread and clamp connection. It has pressure port G1/2 male, R1/2 male, NPT1/2male, M20×1.5 male and DN25 clamp, sealed by FKM or silicon O-ring. The isolated diaphragm is welded in front of thread port, the range is 0bar~0.35bar...350bar(thread connection) and 0bar~0.35bar...35bar(clamp connection). It is suitable for pressure detection in food, medicine, health and other industries and occasions where the measuring medium may be fouled.

We can use gauge type of general, assembled and flush diaphragm type MPM280 to measure pressure below air pressure, the min. pressure can be around -1bar.

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: $2.5\text{k}\Omega \sim 8\text{k}\Omega$
- 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

Construction Performance

- Diaphragm: Stainless steel 316L
- Housing: Stainless steel 316L
- Pin: Kovar
- O-ring: FKM
- Net weight: ~50g(PC1)
~148g(PD1)
~163g (PD1s)

Environment Condition

- Shock: No change at $10\text{g RMS}, (20 \sim 2000)\text{Hz}$
- Impact: 100g, 11ms
- Media compatibility: The gas or liquid which is compatible with construction material and FKM



Features

- Pressure range: 0bar ~ 0.35bar...350bar
- Gauge, Absolute and Sealed gauge
- Constant current or Constant voltage power supply for option
- Isolated construction to measure various fluid media
- Thread connection
pressure: 0bar~0.35bar...350bar
- Clamp connection
pressure: 0bar~0.35bar~35bar
- Hygienic structure optional ($R_a < 0.4\mu\text{m}$)
- Tnegtive 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
- CIP or SIP online cleaning or sterilization system

Basic Condition

- Media temperature: $(25 \pm 1)^\circ\text{C}$
- Environment temperature: $(25 \pm 1)^\circ\text{C}$
- Shock: $0.1g$ (1m/s^2) Max.
- Humidity: $(50 \pm 10)\%\text{RH}$
- Local air pressure: $(0.86 \sim 1.06)\text{bar}$
- Power supply: $(1.5 \pm 0.0015)\text{mA DC}$

Specification

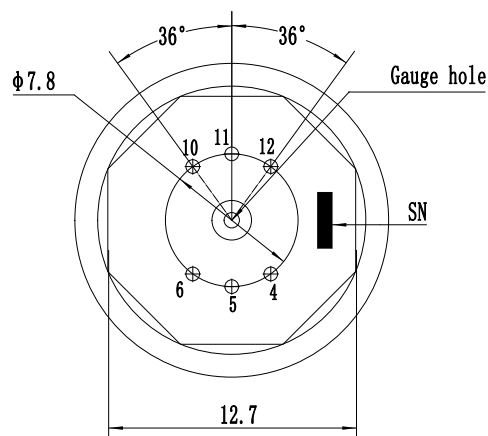
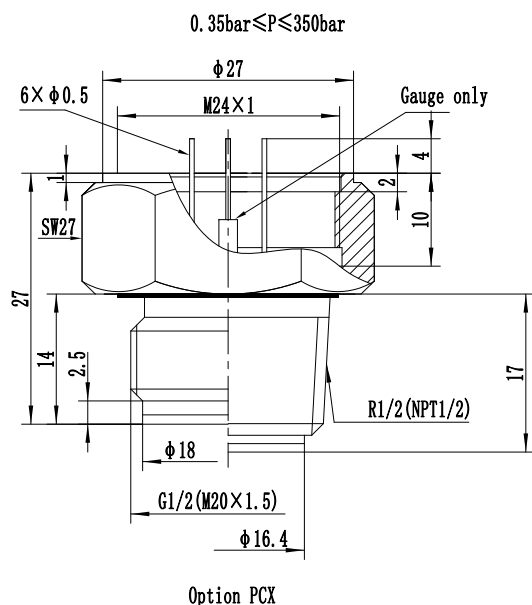
Item*	Min.	Typ.	Max.	Units
Linearity		± 0.15	± 0.25	%FS, BFS
Repeatability		± 0.05	± 0.075	%FS
Hysteresis		± 0.05	± 0.075	%FS
Zero output		± 1.0	± 2.0	mV DC
Output/Span**	70			mV DC
Zero thermal error***		± 0.75	± 1.0	%FS, @ 25°C
FS thermal error***		± 0.75	± 1.0	%FS, @ 25°C
Compensated temp. range	0~50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

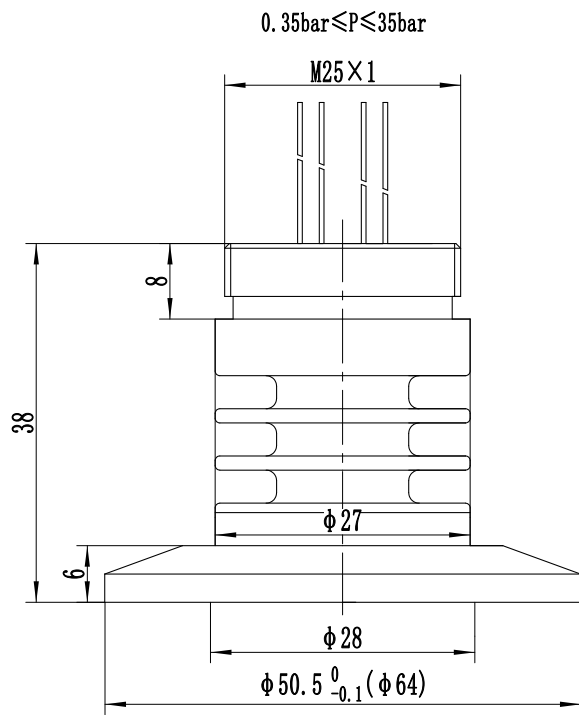
* Testing at basic condition, G: Gauge; A: Absolute; S: Sealed gauge
 ** Output/Span=full scale output - zero point
 350mbar G, FS output $\geq 60\text{mV}$
 700mbar A, 0.1bar A, 700mbar GY, 1.0bar GY, FS output $\geq 45\text{mV}$
 2.0bar A, 3.5bar A, 2bar GY, 3.5bar GY, FS output $\geq 60\text{mV}$
 *** PDX, PDXs, F type zero thermal error, FS thermal error reference temperature condition 35°C
 **** PDX, PDXs, F type compensated temp. range: 0~ 70°C

Outline Construction

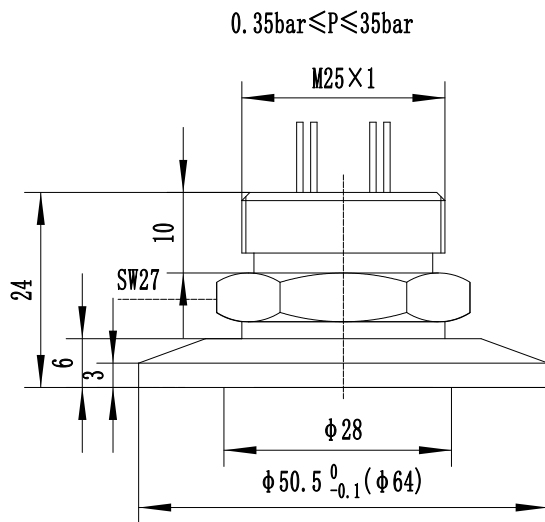
Unit: mm

Electrical Connection

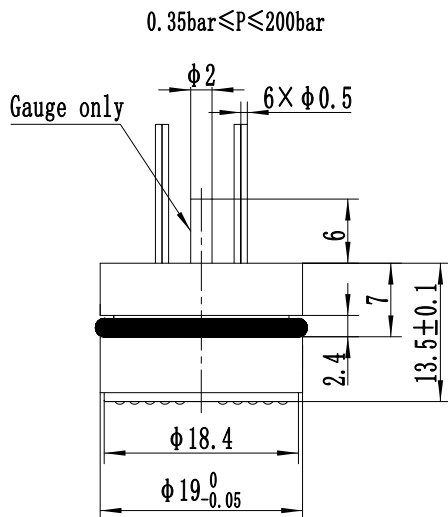




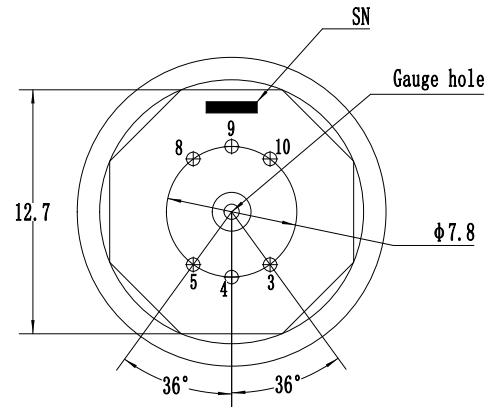
Option PD1s (PD2s)



Option PD1 (PD2)



Option F



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		Hygienic Pressure Sensor						
		code	range	Ref.	Range code	range	Ref.	
		0B	0bar~0.20bar	G	10	0bar~10bar	G.A	
		0A	0bar~0.35bar	G.A	12	0bar~20bar	G.A	
		02	0bar~0.70bar	G.A	13	0bar~35bar	G.A.S	
		03	0bar~1bar	G.A	14	0bar~70bar	S.A	
		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	
		Code	Pressure type					
		G	Gauge					
		A	Absolute					
		S	Sealed gauge					
		Code	Pressure connection					
		0 or null	O-ring					
		F	Flat film(0.35bar~200bar),Φ19mm					
		PC1	Flush film,M20×1.5 External thread				Top: M24×1 Internal thread (end face seal)	
		PC2	Flush film,R1/2 External thread					
		PC3	Flush film,G1/2 External thread					
		PC4	Flush film,NPT1/2 External thread					
		PD1	DN25 Clamp connection				Top: M25×1 External thread	
		PD1s	DN25 Clamp connection with heat sink					
		PD2	DN50 Clamp connection					
		PD2s	DN50Clamp connection with heat sink					
		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)							
	0 or null	normal type						
	W	NEObee M20						
MPM280 08		G	PC1	L	1	Y	W	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. ** The gauge pressure type can be used to measure negative pressure (02 GY: 700mbar~0bar, 03 GY and above: -1.0bar~0bar). *** PDXX Pressure measurement range:0bar~0.35bar...35bar								

Notes

- The default unit of all the products is kPa
(1kPa=0.01bar).

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