



bar **MPM280**

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(Ra<0.4μm)
- negative 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

ELECTRICAL PERFORMANCE

| | |
|----------------------------|---|
| Power supply | ≤2.0mA DC |
| Electrical connection | φ0.5mm Kovar pin or 100mm silicon rubber flexible wires |
| Common mode voltage output | 50% of input (typ.) |
| Input impedance | 2.5kΩ~8kΩ |
| Output impedance | 3.5kΩ~6kΩ |
| Response (10%~90%) | <1ms |
| Insulation resistor | 100MΩ@100V DC |
| Overpressure | 2 times FS |

ENVIRONMENTAL CONDITIONS

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



MICROSENSOR

AUTHORIZED DISTRIBUTOR

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.

BASIC CONDITIONS

| | |
|-------------------------|--------------------------------|
| Media temperature | (25±1)°C |
| Environment temperature | (25±1)°C |
| 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)mA DC |

CONSTRUCTION PERFORMANCE

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

05.2024 | version 0001

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

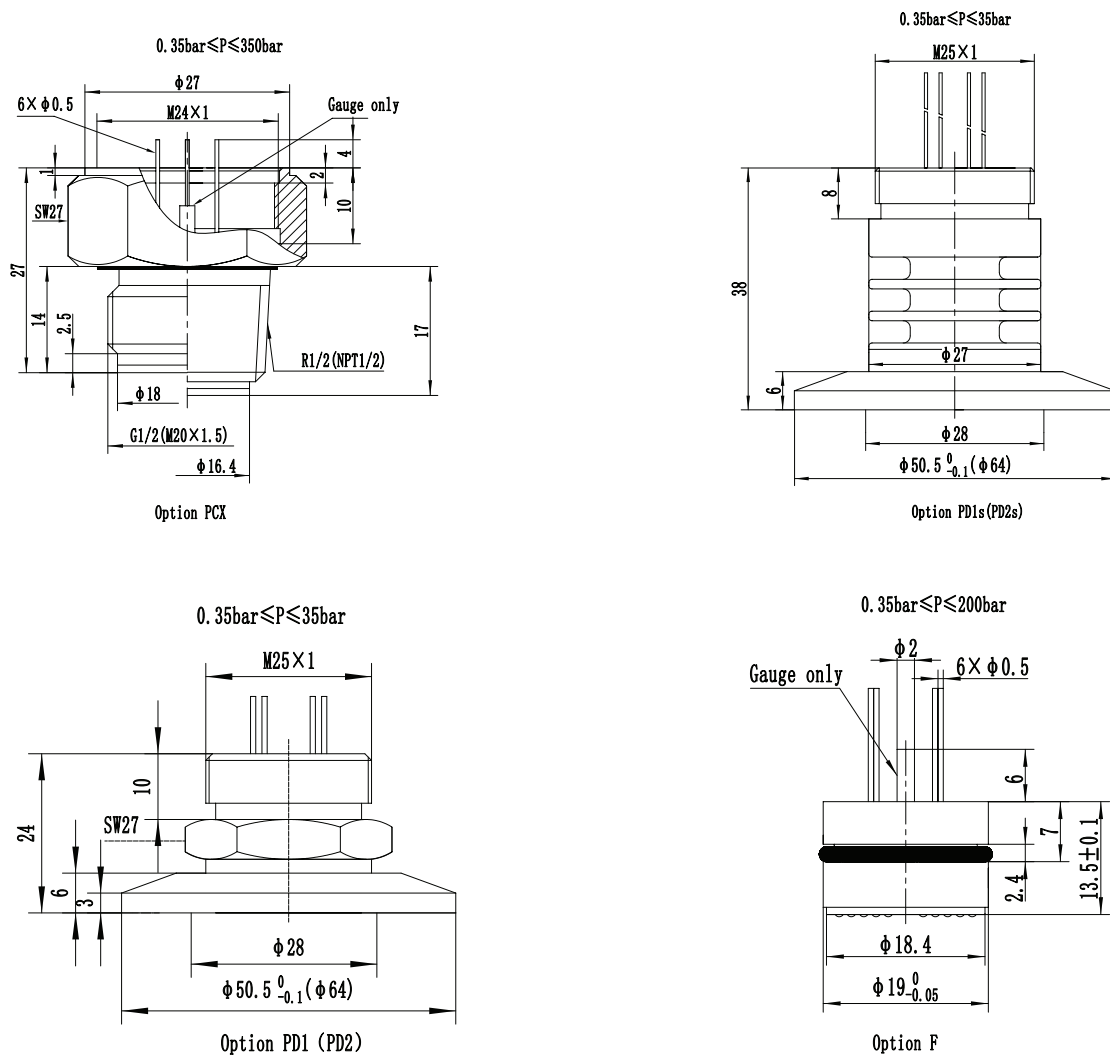
350mbar G, FS output ≥60mV

700mbar A, 0.1bar A, 700mbar GY, 1.0bar GY, FS output ≥45mV 2.0bar A, 3.5bar A, 2bar GY, 3.5bar GY, FS output ≥60mV

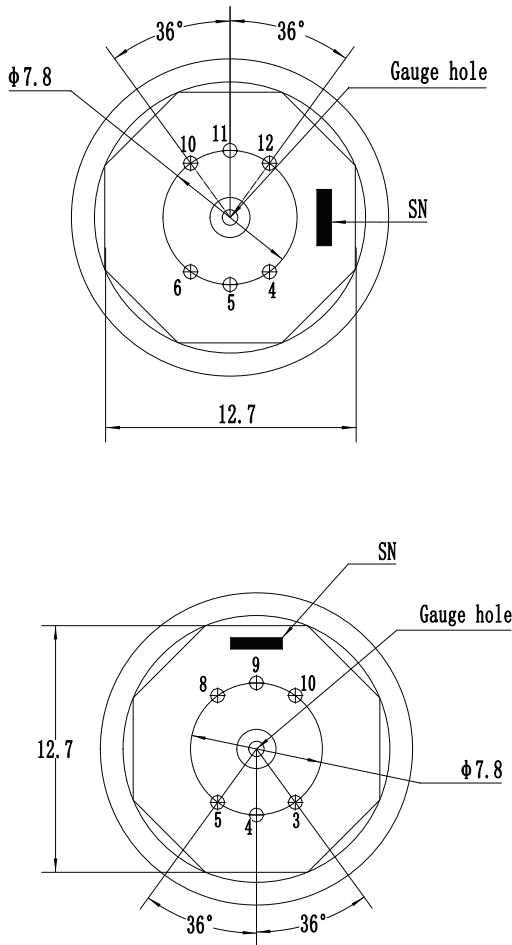
*** PDX, PDXs, F type zero thermal error, FS thermal error reference temperature condition 35°C

**** PDX, PDXs, F type compensated temp. range: 0~70°C

OUTLINE CONSTRUCTION (UNIT:mm)



ELECTRICAL CONNECTION



| 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

1. 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 | | | | | |
| | | 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 | | | | | |
| | | PD1s | DN25 Clamp connection with heat sink | | | | | |
| | | PD2 | DN50 Clamp connection | | | | | |
| | | PD2s | DN50Clamp connection with heat sink | | | | | |
| | | | Top: M24×1 Internal thread (end face seal) | | | | | |
| | | | Top: M25×1 External thread | | | | | |
| | | 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).

*** PDX Pressure measurement range:0bar~0.35bar...35bar

Notes:

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

The information provided herein is to the best of our knowledge true and accurate, it is provided for guidance only. All specifications are subject to change without prior notification.

Althen is the innovative sensor expert that creates integrated sensor and measurement solutions for the creators of tomorrow | althensensors.com

We create integrated sensor and measurement solutions. In addition we offer services such as calibration, repairs, design & engineering, training and renting of measurement equipment.