



bar **MPM281PT**

FEATURES

- Pressure range: 0bar~0.35bar...1000bar
- Gauge, Absolute, Sealed gauge
- Pressure and Temperature dual output
- Temperature error $\pm 0.5^{\circ}\text{C}$
- $\Phi 19\text{mm}$ standard OEM pressure sensor
- Long-term stability $\pm 0.1\%\text{FS}/\text{Year}$

APPLICATION

- Industrial process control
- Level measurement
- Gas, liquid pressure measurement
- Pressure checking meter
- Liquid pressure system and Switch
- Cooling equipment and Air conditioning system
- Aviation and Navigation inspection
- Medical Oxygen Pressure Measurements

ELECTRICAL PERFORMANCE

Power supply	$\leq 2.0\text{mA DC}$
Electrical connection	$\varnothing 0.5\text{mm}$ Kovar pin or 100mm silicon rubber flexible wires
Common mode voltage output	50% of input (typ.)
Input impedance	$2\text{k}\Omega \sim 8\text{k}\Omega$
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	Stainless steel 316L
Housing	Stainless steel 316L
Pressure leading tube	Stainless steel 316L
Pin	Kovar
O-ring	FKM
Net weight	$\sim 16\text{g}$



MICROSENSOR

AUTHORIZED DISTRIBUTOR

MPM281PT Pressure and Temperature Sensor is a high-stability measuring element with an isolated construction and precise temperature compensation. It is packaged with a whole stainless steel 316L housing with diameter of $\Phi 19\text{mm}$. The sensor chip adopts high stable and reliable silicon die and PT100 or PT1000 temperature probes, which can achieve an accurate pressure and temperature measurement. The precision-calibrated compensation circuit performs a temperature compensation and zero-point deviation correction in a wide temperature range for the sensor element. The measured pressure is transmitted to the sensor chip through the isolation diaphragm and the internal medium, which realizes the precise conversion of pressure to electrical signal and the built-in platinum resistor can measure the temperature of the measured medium, in which the monitoring of both pressure and temperature is realized.

MPM281PT has been strictly inspected and screened on the automated production line, and the mature production process ensures that the sensor has excellent reliability and long-term stability. It can be widely used in industrial sites where pressure and temperature integrated measurement are required.

BASIC CONDITIONS

Media temperature	$(35 \pm 1)^{\circ}\text{C}$
Environment temperature	$(35 \pm 1)^{\circ}\text{C}$
Shock	0.1g ($1\text{m}/\text{s}^2$) Max.
Humidity	$(50 \pm 10)\%\text{RH}$
Local air pressure	$(0.86 \sim 1.06)\text{bar}$
Power supply	$(1.5 \pm 0.0015)\text{mA DC}$

ENVIRONMENTAL CONDITIONS

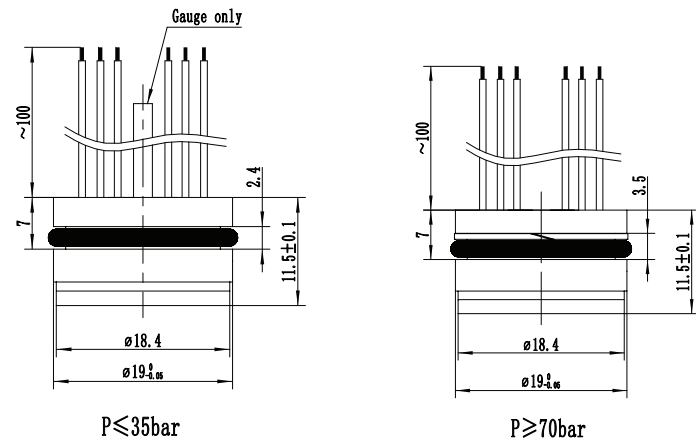
Shock	No change at 10gRMS , (20~2000)Hz
Impact	100g, 11ms
Media compatibility	The gas or liquid which is compatible with stainless steel and FKM

SPECIFICATION

Class	Item*	Min.	Typ.	Max.	Units	
Temperature Parameters	Temp. error		±0.5		°C	
	Response time		0.4 (In water), 1.0(In air)		m/s	
	Temp. Stability Error		≤ 0.05		%/Year	
Pressure Parameters	Linearity**		±0.15	±0.25	%FS,BFSL	
	Repeatability		±0.05	±0.075	%FS	
	Hysteresis		±0.05	±0.075	%FS	
	Zero output			±2.0	mV DC	
	Output/Span***	70			mV DC	
	Zero thermal error		±0.75	±1.0	%FS, @25°C	
	Span thermal error		±0.75	±1.0	%FS, @25°C	
	Compensated temp. range			0~70(0.35bar G,0.35 bar A)		°C
				-10~80		°C
	Working temp. range			-40~125		°C
	Storage temp. range			-40~125		°C
Pressure stability error			±0.1	±0.2	%FS/Year	

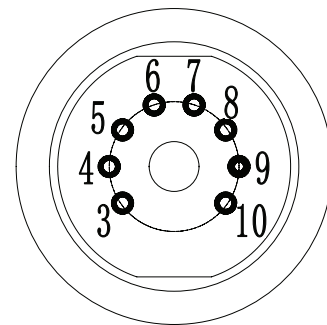
* testing at basic condition
 ** OA Linearity ≤ ±0.3%FS
 *** Output/Span=full scale output - zero point
 For range code 0.7bar,FS output ≥60mV

OUTLINE CONSTRUCTION (UNIT:mm)



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

ELECTRICAL CONNECTION



Pin	For range 02/03/17/18/19/20		Other range codes	
	Definition	Wire color	Definition	Wire color
4	-OUT	Blue	+OUT	Red
7	-IN	Yellow	-IN	Yellow
8	+IN	Black	+IN	Black
9	+OUT	Red	-OUT	Blue
5&6	T OUT	White or Green	T OUT	White or Green

T OUT is the temperature signal, and the electrical connection is subject to the connection mode indicated on the attached parameter sheet.

ORDER GUIDE

MPM281PT	Pressure and Temperature Sensor					
	Range code	Pressure range	Ref.	Range code	Pressure range	Ref.
	0A	0bar~0.35bar	G.A	13	0bar~35bar	G.A.S
	02	0bar~0.70bar	G.A	14	0bar~70bar	S.A
	03	0bar~1bar	G.A	15	0bar~100bar	S.A
	07	0bar~2bar	G.A	17	0bar~200bar	S.A
	08	0bar~3.5bar	G.A	18	0bar~350bar	S.A
	09	0bar~7bar	G.A	19	0bar~700bar	S.A
	10	0bar~10bar	G.A	20	0bar~1000bar	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				
	2*	100mm silicon rubber flexible wires (default)				
	Code	Temperature probe				
	T1	PT100				
	T2	PT1000				
	Code	Special measurement				
	Y	Gauge sensor to measure vacuum (-1bar ~ 0bar)				
MPM281PT	07	G	0	L	P	T1 Y the whole spec
<p>**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.</p>						

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 by a "suspended" structure so as to avoid pressing the seal on its end face and to prevent the stability of sensor element.
3. The isolation diaphragm and the ceramic board should be protected to avoid bumps that affect the performance or cause damage to the element.
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.

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.

Benelux
sales@althen.nl

Germany/Austria/Switzerland
info@althen.de

France
info@althensensors.fr

Sweden
info@althensensors.se

USA/Canada
info@althensensors.com

Other countries
info@althensensors.com