

MPM289 Pressure Sensor



Features

- Pressure range 0kPa~ 35kPa...100MPa
- Gauge, Absolute, Sealed gauge
- Constant current power supply
- Isolated construction, enable to measure various media
- $\Phi 19\text{mm}$ standard OEM pressure sensor
- Full stainless steel 316L
- Wide compensation temperature range $0^{\circ}\text{C} \sim 70^{\circ}\text{C}$

Application

- Industrial process control
- Liquid level measurement
- Gas, Liquid pressure measurement
- Pressure checking meter
- Pressure calibrator
- Liquid pressure system and switches
- Cooling equipment and air conditioning system
- Aviation and navigation inspection

Introduction

MPM289 Pressure Sensor is the piezoresistive pressure sensor with isolated construction and precise compensation. It uses high stable silicon die. Stainless steel 316L housing with diameter $\Phi 19\text{mm}$. Wider temperature compensation and zero correction are calibrated by laser trimming technics. The measured pressure is transmitted onto pressure sensitive chip through 316L diaphragm and inner media, to transform the pressure to electric signal.

MPM289 pressure sensor is inspected and screened on automatic production line, testing and checking time after time strictly. It is widely used for various pressure measurement fields.

Electrical Specification

- Power Supply: $\leq 2.0\text{mA DC}$
- Electric Connection: Kovar pin or 100mm silicone wires
- Common mode voltage output: 50% input (typ.)
- Input Impedance: $2\text{k}\Omega \sim 5\text{k}\Omega$
- Output Impedance: $3.5\text{k}\Omega \sim 6\text{k}\Omega$
- Insulation Resistor: $100\text{M}\Omega @ 100\text{V DC}$
- Overpressure: 2 times FS or 110MPa(min.value is valid)

Construction

- Diaphragm: Stainless steel 316L
- Housing: Stainless steel 316L
- Pin: Kovar
- O-ring: FKM
- Net weight: $\sim 25\text{g}$
- Oil filling: Silicone oil

Environment Condition

- 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

Basic Condition

- Media temperature: $(35 \pm 1)^\circ\text{C}$
- Environment temperature: $(35 \pm 1)^\circ\text{C}$
- Shock: $0.1g$ (1m/s^2)Max
- Humidity: $(50\% \pm 10\%)RH$
- Local air pressure: $(86 \sim 106)\text{kPa}$
- Power supply: $(1.5 \pm 0.0015)\text{mA DC}$

Specification

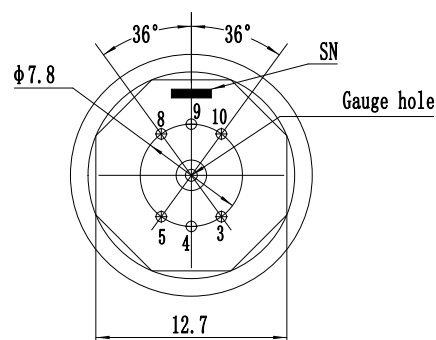
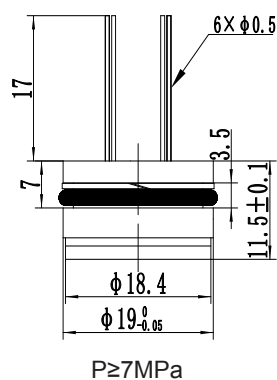
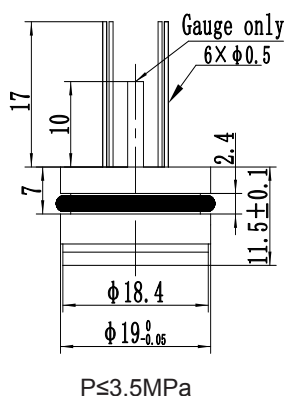
Item*	Min.	Typ.	Max.	Units
Pressure nonlinearity**		± 0.10	± 0.25	%FS,BFSL
Pressure repeatability			± 0.075	%FS
Pressure hysteresis			± 0.075	%FS
Zero output			± 2.0	mV DC
Output/Span***	50			mV DC
Zero thermal error			± 1.0	%FS, @ 35°C
Span thermal error			± 1.0	%FS, @ 35°C
Compensation temp. range	0 ~ 70			$^\circ\text{C}$
Operating temp. range	-40 ~ 125			$^\circ\text{C}$
Storage temp. range	-40 ~ 125			$^\circ\text{C}$
Stability error	± 0.2			%FS/Year

* Testing at basic condition
 ** P=35kPa Max. Nonlinearity: ± 0.3 (%FS,BFSL)
 *** Output/Span=full scale output - zero point

Outline Construction

Unit: mm

Electrical Connection



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

Pin	Definition	Wire color
4	-OUT	Blue
5	-IN	Yellow
8	+IN	Black
9	+OUT	Red

Order Guide

MPM289-20-A-F-L-1

Range code	Pressure range	Ref.
0A	0kPa~35kPa	G.A
02	0kPa~70kPa	G.A
03	0kPa~100kPa	G.A
07	0kPa~200kPa	G.A
08	0kPa~350kPa	G.A
09	0kPa~700kPa	G.A
10	0MPa~1MPa	G.A
12	0MPa~2MPa	G.A
13	0MPa~3.5MPa	G.A.S
14	0MPa~7MPa	S.A
15	0MPa~10MPa	S.A
17	0MPa~20MPa	S.A
18	0MPa~35MPa	S.A
19	0MPa~70MPa	S.A
20	0MPa~100MPa	S.A

Code	Electrical connection
1	Kovar pin
2	100mm silicone wires

Code	Compensation
L	Temperature compensation (1.5mA excitation)
M	Without temperature compensation, capable of providing resistance compensation value.(1.5mA excitation)

Code	Sealing mode
0	Null
F	FKM O-ring

Code	Pressure type
G	Gauge
A	Absolute
S	Sealed gauge

Notes

1. 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.
2. Please pay attention to protect the diaphragm and the compensated board to prevent any damage or bad performance.
3. Temperature resistant range of standard FKM O-ring of sensor is -20℃ ~ 250℃ . When operating temperature is lower than -20℃ , or sensor is applied in critical environment, please contact us.