

# Industrial Pressure Transmitter Hazardous Area


## MPM489



### Applications

- Hydrology and water resources
- Petrochemical industry
- Power Generation / Electricity Industry
- Mechanical Manufacturing
- Hydraulic and Pneumatic Pressures
- Hydrogen storage system

### Features

- Intrinsic safety type (PCEC), Ex ia IIC T6 Ga
- Explosion-proof type (CNEX), Ex d IIC T6 Gb
- ATEX type,  II 1 G Ex ia IIC T4 Ga
- CE, RoHS and CCS approved.

### Introduction

The MPM489 is a pressure transmitter designed for general industrial applications. At the core of the MPM489 is a Piezoresistive sensing element, which provides excellent stability and reliability. Together with signal conditioning circuitry, everything is enclosed in a high-strength, stainless steel housing.

The MPM489 offers several output options, multiple process connections and electrical connections, and is an ideal solution for automation control applications that requires precise measurement.

Gold plated option is available for Hydrogen application up to 200bar.

### Specifications

Range	-1bar - 0mbar to 100mbar - 1000bar
Overpressure	2 x FS or 1100bar (Whichever is less)
Pressure Type	Gauge, Absolute, Sealed Gauge
Accuracy	See Accuracy on page 2
Long-term Stability	±0.3% FS/year
Operation Temperature	-30°C to +80°C (B1 type, B4 type)
	-20°C to +70°C (B2 type, cable material: PE, PVC)
	-20°C to +80°C (B2 type, cable material: PUR)
	-25°C to +80°C (ATEX, B1 type)
Storage Temperature	-20°C to +60°C (ATEX, B2 type)
	-20°C to +60°C (Exd type)
	-40°C to +120°C
Vibration	10g, 55Hz to 2000Hz
Shock	100g, 11ms
Protection Rating	IP65
Weight	≤270g
Reverse Polarity	Reverse Polarity & Overvoltage Protected
Lightning Protection	500V Line-Line, 1kV Line to Earth

## Accuracy

Pressure Type	Range	Accuracy
Gauge G	0bar to 100mbar < X < 200mbar	±1% FS
	200mbar ≤ X ≤ 1bar	±0.5% FS
	1bar ≤ X ≤ 35bar	±0.25% FS (optional)
		±0.5% FS
	-1bar to -350mbar < X ≤ 2bar	±1% FS
-1bar to -350mbar < X < 2bar to 35bar	±0.5% FS	
Absolute A	0bar to 700mbar < X ≤ 1bar	±1% FS
	1bar < X < 10bar	±0.5% FS
	10bar < X < 1000bar	±0.25% FS (optional)
±0.5% FS		
Sealed Gauge S	35bar < X < 1000bar	±0.25% FS (optional)
		±0.5% FS

Test standard: GB/T 17614.1-2015/IEC60770-1:2010

Environment temperature: 20°C ±5°C

Relative humidity: 45% - 75%

## Thermal Drift

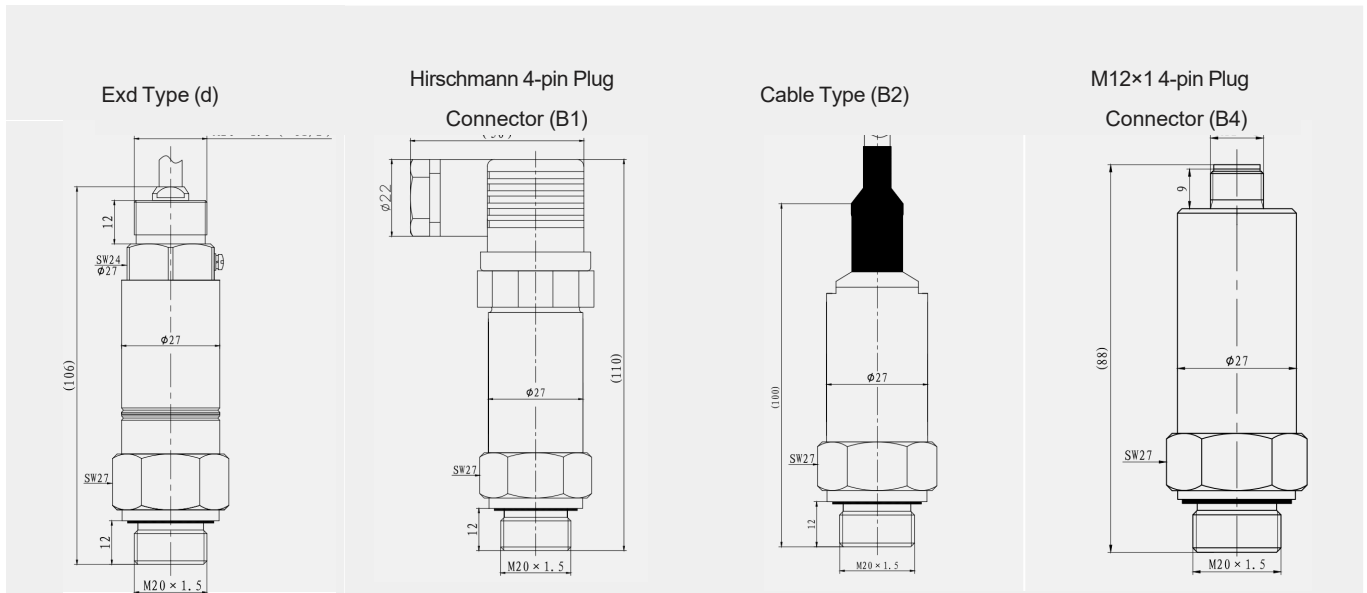
Zero Thermal Drift	±0.05% FS/°C (≤1bar)
	±0.03% FS/°C (>1bar)
Span Thermal Drift	±0.05% FS/°C (≤1bar)
	±0.03% FS/°C (>1bar)

## Output Signals

Output Signal	Power Supply	Output Format	Load Resistance
4mA - 20mA DC (E)	11V - 28V DC	2-wire	≤(U-11)/0.02 (Ω)
1V - 5V DC (F)			
0V - 5V DC (J)			
0.5V - 4.5V DC (K2)	15V - 28V DC	3-wire	≥10kΩ
0V - 10V DC (K2)			
0.5V - 4.5V DC (K1)	5V ± 0.1V DC		
0.5V - 2.5V DC (W1)			
0.5V - 2.5V DC (W2)	3.3V ± 0.1V DC		

### Outline Dimensions

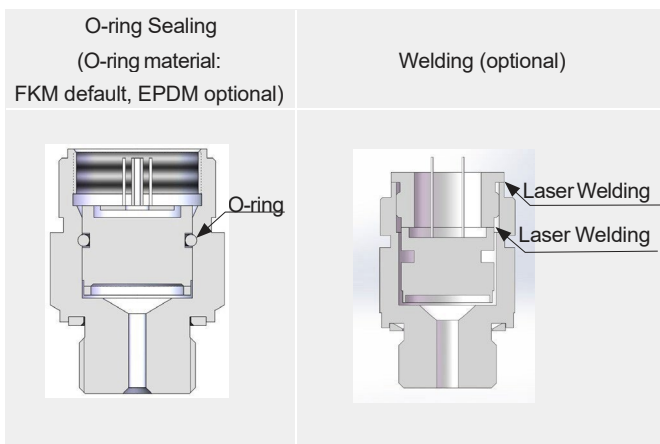
unit: mm



### Electrical Connection

	Hirschmann 4-pin Plug Connector (B1)		Cable (B2)		M12x1 4-pin Plug Connector (B4)	
Definition						
	current 2-wire	voltage 3-wire	current 2-wire	voltage 3-wire	current 2-wire	voltage 3-wire
+V	1	1	Red	Red	1	1
+OUT	2	3	Black	White	3	3
GND	null	2	N/C	Black	N/C	2

### Sensor Sealing



### Materials

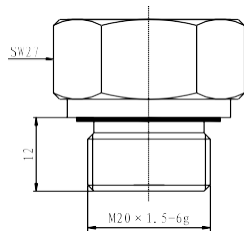
- Wetted Parts
  - Isolated Diaphragm: SS 316L/Tantalum/Gold-Plated
  - Pressure Port: SS 304/SS 316L/Hastelloy C
- Non-wetted Parts
  - Housing: SS 304/SS 316L
  - Cable wire: PUR Default, PE/PVC optional

## Process Connection

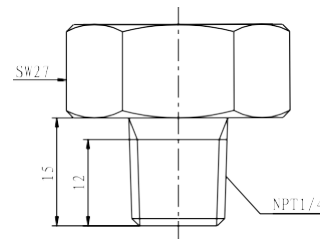
### Process Connection Dimensions

unit: mm

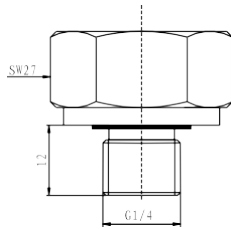
M20×1.5 Male, End Face Seal (C1)



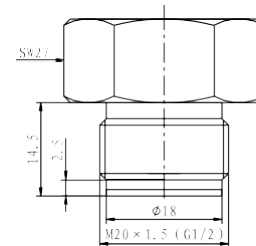
NPT1/4 Male (C6)



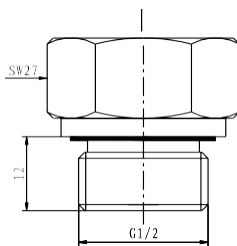
G1/4 Male, End Face Seal (C2)



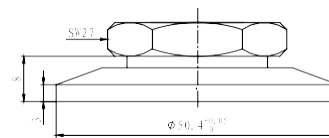
M20×1.5 or G1/2 Flush Structure (PC1/PC3)



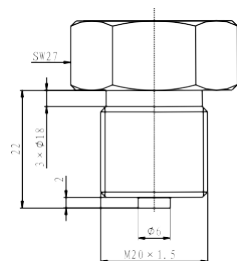
G1/2 Male, End Face Seal (C3)



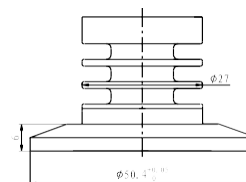
DN25 Clamp Connection (PD1)



M20×1.5 Male, Waterline Seal (C5)



DN25 Clamp Connection with Heat Sink (PD1s)



### Ordering Guide

MPM489	Pressure Transmitter		
Range	Measurement Range -1bar - 0bar to 100mbar - 1000bar		
[0 to X]mbarL or barL	X: actual measured range, L means cable length when electrical connection is B2		
Code	Power Supply		
V1	11V - 28V DC		
V6	5V ± 0.1V DC		
V7	3.3V ± 0.1V DC		
Code	Output Signal		
E	4mA - 20mA DC		
F	1V - 5V DC		
J	0V - 5V DC		
V	0V - 10V DC		
K	0.5V - 4.5V DC		
W	0.5V - 2.5V DC		
Code	Material		
	Isolated Diaphragm	Pressure Port	Housing
22	SS 316L	SS 304	SS 304
24	SS 316L	SS 316L	SS 316L
25	Tantalum	SS 304	SS 304
35	Tantalum	Hastelloy C	SS 304
Code	Electrical Connection <sup>①</sup>		
B1	4-pin plug connector		
B2	Cable Connection		
B4	M12×1 4-pin plug connector		
Code	Process Connection		
C1	M20×1.5 male, end face seal		
C2	G1/4 male, end face seal		
C3	G1/2 male, end face seal		
C5	M20×1.5 male, waterline seal		
C6	NPT1/4 male		
PC1	M20×1.5 flush structure	0mbar - 200mbar to 350bar	
PC3	G1/2 flush structure		
PD1	DN25 clamp	0mbar - 350mbar to 350bar	
PD1s	DN25 clamp with heat sink		
Code	Accessory		
null	no accessory		
M6	4 digits LED digital indicator (only for 4mA - 20mA DC output non-explosion proof or non-ship-use products with B1 connection)		
M7	4 digits LCD digital indicator (only for 4mA - 20mA DC output non-explosion proof or non-ship-use products with B1 connection)		
Code	Certification Requirement <sup>②</sup>		
Null	No Certification Requirement		
i	Intrinsic Safe (PECE) Ex ia IIC T6 Ga		
T	Ship-use		
y	ATEX		
d	CNEX Ex d IIC T6 Ga		
Code	Pressure Type		
G	Gauge		
A	Absolute		
S	Sealed Gauge		
Code	Hydrogen compatibility (0 - 0.35 to 200bar)		
H	Gold-plated sensing element		

MPM489 [0 to 16]bar V1 E 22 B1 C2 M6 y G H

## Ordering Notes

1. " ① ", for B1 and B4 electrical connection, if cable is needed, please specify it in the order.
2. " ② " refers to certification requirements. For the intrinsically safety type, current output is available only. The product can be intrinsically safe and suitable for ship-use simultaneously or can be intrinsically safe and flameproof simultaneously.
3. As for accuracy, see "Accuracy" on Page 2 for details.
4. The application temperature range of Fluoro rubber O-ring sealing is -20°C to 250°C.  
When the application temperature <-20°C, EPDM O-ring is required.
5. The cable length is 2m by default, cable material is available for 3 types: PE cable is provided as default; if other material is needed, please specify in the order.
6. When ordering 5V DC/3.3V DC power products with cable connection, the cable length should be less than 10m.
7. When ordering the transmitter with M6 or M7 indicator, power supply should  $\geq 16V$  DC.
8. Environmental temperature should be -20°C to +70°C when ordering the transmitter with M6 indicator, environmental temperature should be -10°C to +60°C when ordering the transmitter with M7 indicator, indicator setting can refer to our indicator lectotype, which can be found on our company's website.
9. If a metrology verification certificate is needed or there are other requirements, please contact us and specify it in the order.