Pressure Transmitter
for Multiple Applications and Customization

MPM489

Applications

- Hydrology and water resources
- Petroleum and petrochemical industry
- Electricity industry
- Mechanical Manufacturing
- Hydraulic pressure and pneumatic system

Features

- Intrinsic safety type, Ex ia IIC T6 Ga
- Explosion-proof type, Ex d IIC T6 Gb
- ATEX type, Ⓔx 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. It contains a piezoresistive sensing element of excellent stability and reliability and a dedicated circuit that are housed in a high-strength stainless steel housing. Featured with integrated structure, standard outputs, multiple process connection and electrical connections, the product is an ideal solution for automation control applications that requires precise measurement. The product is also applicable in harsh environment and hazardous areas.

Specifications

Range	-1bar…0mbar ~ 100mbar…1000bar
Overpressure	2 times FS or 1100bar (minimum value is valid)
Pressure Type	gauge, absolute, sealed gauge
Accuracy	see Accuracy on page 2
Long-term Stability	±0.3%FS/year
Operation Temperature	-30°C ~ 80°C (B1 type, B4 type)
	-20°C ~ 70°C (B2 type, cable material: PE, PVC)
	-20°C ~ 80°C (B2 type, cable material: PUR)
	-30°C ~ 60°C (intrinsic safety type, B1 type)
	-20°C ~ 60°C (intrinsic safety type, B2 type)
	-20°C ~ 60°C (Exd type)
Storage Temperature	-40°C ~ 120°C
	-20°C ~ 85°C (B2 type)
Vibration	10g, 55Hz ~ 2000Hz
Shock	100g, 11ms
Protection Rating	IP65
Weight	≤270g

Accuracy

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

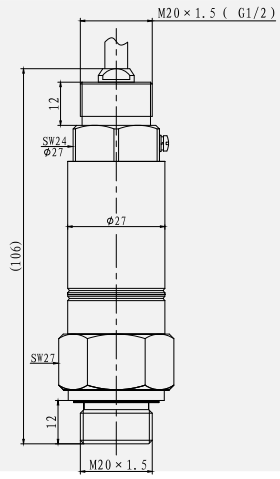
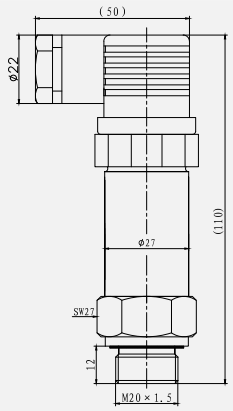
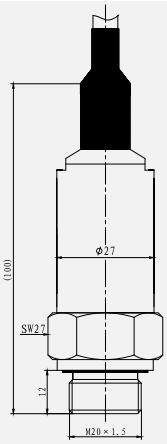
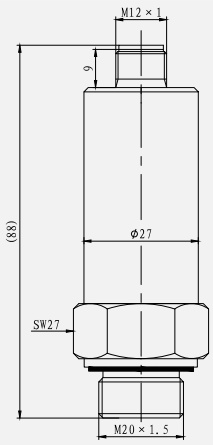
Zero Thermal Drift	±0.05%FS/°C (≤1bar)
	±0.03%FS/°C (>1bar)
Span Thermal Drift	±0.05%FS/°C (≤1bar)
	±0.03%FS/°C (>1bar)

Output Signals

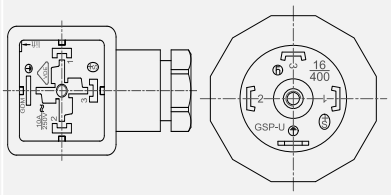
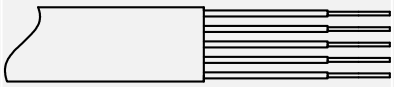
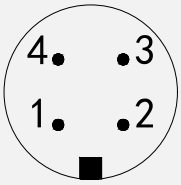
Output Singal	Power Supply	Output Format	Load Resistance
4mA~20mA DC(E)	11V~28V DC	2-wire	≤(U-11)/0.02 (Ω)
1V~5V DC(F)		3-wire	≥10kΩ
0V~5V DC(J)			
0.5V~4.5V DC (K2)			
0V~10V DC (K2)	15V~28V DC		
0.5V~4.5V DC(K1)	5V±0.1V DC		
0.5V~2.5V DC(W1)			
0.5V~2.5V DC(W2)	3.3V±0.1V DC		

Outline Dimensions

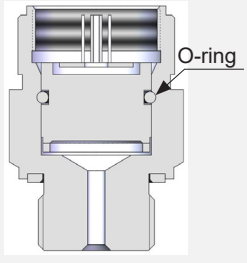
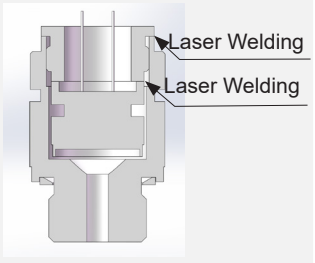
unit: mm

Exd Type (d)	Hirschmann 4-pin Plug Connector (B1)	Cable Type (B2)	M12×1 4-pin Plug Connector (B4)
			

Electrical Connection

	Hirschmann 4-pin Plug Connector (B1)		Cable (B2)		M12×1 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	null	black	null	2

Sensor Sealing

O-ring Sealing (O-ring material: Fluororubber/EPDM)	Welding
	

Materials

Wetted Parts

Isolated Diaphragm: SS 316L/Tantalum

Pressure Port: SS 304/SS 316L/Hastelloy C

Non-wetted Parts

Housing: SS 304/SS 316L

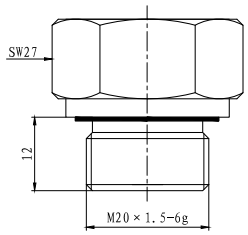
Cable wire: PE/PUR/PVC

Process Connection

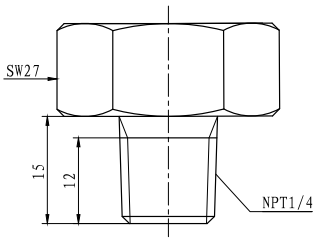
Process Connection Dimensions

unit: mm

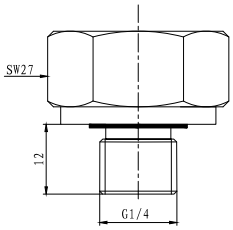
M20×1.5 Male, End Face Seal (C1)



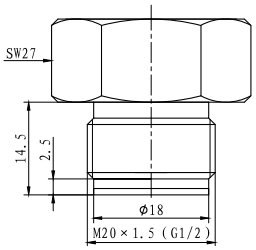
NPT1/4 Male (C6)



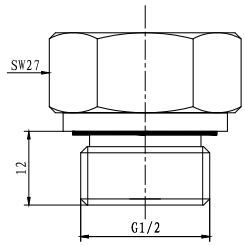
G1/4 Male, End Face Seal (C2)



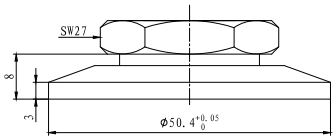
M20×1.5 or G1/2 Flush Structure (PC1/PC3)



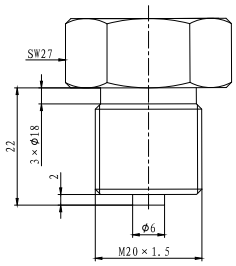
G1/2 Male, End Face Seal (C3)



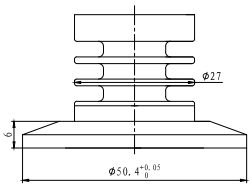
DN25 Clamp Connection (PD1)



M20×1.5 Male, Waterline Seal (C5)



DN25 Clamp Connection with Heat Sink (PD1s)



Ordering Guide

MPM489	Pressure Transmitter
Range	Measurement Range -1bar…0bar ~ 100mbar…1000bar
[0 ~ 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	SS316L
25	Tantalum	SS 304	SS 304
35	Tantalum	Hastelloy C	SS 304

Code	Electrical Connection ①
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…350bar
PC3	G1/2 flush structure	
PD1	DN25 clamp	0mbar ~ 350mbar…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 ②
null	no certification requirement
i	intrinsic safe Ex ia IIC T6 Ga
T	ship-use
y	ATEX
d	Ex d IIC T6 Ga

Code	Pressure Type
G	gauge
A	absolute
S	sealed gauge

MPM489	[0 ~ 16]bar	V1	E	22	B1	C2	M6	i	G	Complete Type Specification

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 fluororubber O-ring sealing is -20℃ ~250℃ , when application temperature <-20℃ , EPDM O-ring is needed.
5. The cable length is 1.5m 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 ≥16V DC.
8. Environmental temperature should be -20℃ ~ 70℃ when ordering the transmitter with M6 indicator, environmental temperature should be -10℃ ~ 60℃ 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 metrology verification certificate is needed or there are other requirements, please contact us and specify it in the order.