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Датчик давления для различных применений и индивидуальной настройки МРМ489. Технические характеристики.



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,  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

Definition	Hirschmann 4-pin Plug Connector (B1)		Cable (B2)		M12×1 4-pin Plug Connector (B4)	
	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

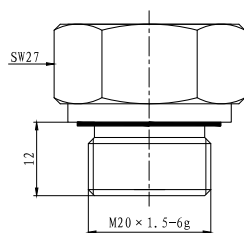
Cable wire: PE/PUR/PVC

Process Connection

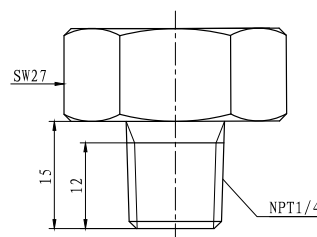
Process Connection Dimensions

unit: mm

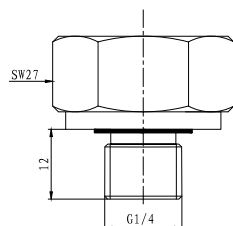
M20×1.5 Male, End Face Seal (C1)



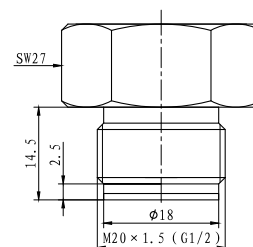
NPT1/4 Male (C6)



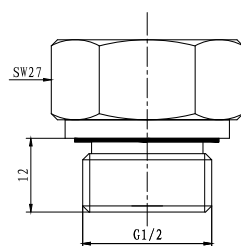
G1/4 Male, End Face Seal (C2)



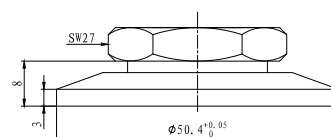
M20×1.5 or G1/2 Flush Structure (PC1/PC3)



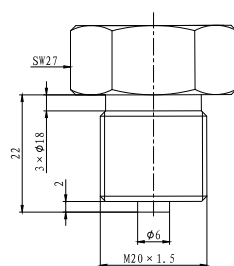
G1/2 Male, End Face Seal (C3)



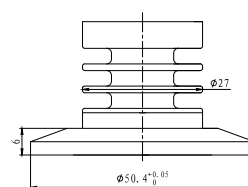
DN25 Clamp Connection (PD1)



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 $-20^{\circ}\text{C} \sim 250^{\circ}\text{C}$, when application temperature $< -20^{\circ}\text{C}$, 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 $\geq 16\text{V DC}$.
8. Environmental temperature should be $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$ when ordering the transmitter with M6 indicator, environmental temperature should be $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$ 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 metrology verification certificate is needed or there are other requirements, please contact us and specify it in the order.

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