

# Pressure Transmitter for Hydrogen Measurement

## MPM480GH



### Applications

- Hydrogen production system
- Hydrogen storage system
- Fuel cell

### Features

- Inner sensor diaphragm is gold plated (MPM280Au), fully welded inner sensor assembly structure, effectively prevent hydrogen penetration
- Support reversed-polarity, overcurrent and overvoltage protection, conforming to EMI protection requirements
- Multiple output signals available
- Intrinsic safety type circuit, or use in hazardous areas
- High accuracy, up to  $\pm 0.25\%$ FS

### Introduction

MPM480GH is a pressure transmitter designed for gas industrial applications. It contains a piezoresistive sensor (gold plated) of excellent stability and reliability, a standardized output signal circuit and the high-strength stainless steel housing. The inner sensor diaphragm is processed with gold plating, capable for use in hydrogen environment. Its fully welded inner sensor assembly structure, wide temperature working capacity, and multiple cable materials options, making it an effective pressure measuring solution for the gas industry.

### Specifications

Range	0mbar ~ 250mbar...70bar
Overpressure	$\leq 1.5$ times FS
Pressure Type	gauge, absolute, sealed gauge
Accuracy	see Accuracy Table
Long-term Stability	$\pm 0.2\%$ FS/year
Compensated Temperature	-10°C ~ 60°C
Application Temperature	-30°C ~ 85°C (B1 type, B4 type)
	-20°C ~ 70°C (B2 type, cable material: PE, PVC)
	-20°C ~ 80°C (B2 type, cable material: PUR)
Storage Temperature	-30°C ~ 85°C (B1 type, B4 type)
	-20°C ~ 85°C (B2 type)
Vibration	20g, 20Hz ~2000Hz
Shock	20g, 11ms
Protection Rating	IP65

## Accuracy

Pressure Type	Range	Accuracy
Gauge (G)	0mbar ~250mbar < X ≤ 350mbar	±1%FS
	350mbar ≤ X ≤ 1bar	±0.5%FS
	1bar < X ≤ 70bar	±0.25%FS ±0.5%FS
Absolute (A)	0mbar ~ 700mbar < X ≤ 1bar	±1%FS
	1bar < X ≤ 10bar	±0.5%FS
	10bar < X ≤ 70bar	±0.25%FS
Sealed gauge (S)	35bar < X ≤ 70bar	±0.25%FS
		±0.5%FS

**Note:** the accuracy is within the range of compensation temperature (- 10°C ~60 °C )

Test Standard: GB/T 17614.1-2015/IEC60770-1:2010;

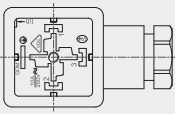
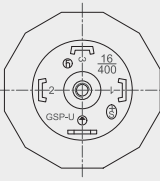

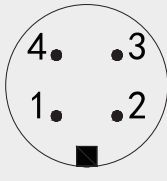
## Output Signals

Output Signal	Power Supply	Output Format	Load Resistance	Insulation Resistance
4mA~20mA DC(E)	12V~28V DC	2-wire	≤(U-11)/0.02 (Ω)	100MΩ@500V DC
0V~10V DC(V)	15V~28V DC	3-wire	≥10kΩ	
0V~5V DC(J)				
1V~5V DC(F)				
0.5V~4.5V DC(K2)				
0.5V~4.5V DC(K1)	5V~10V DC			
0.5V~2.5V DC(W)	3.2V~5V DC			

## Outline Dimensions

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

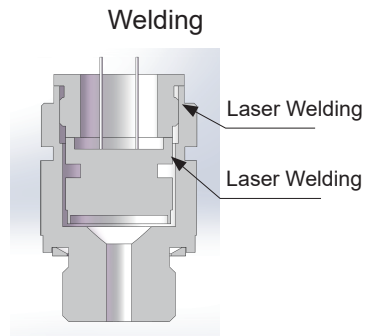
### Electrical Connection

Definition	Hirschmann 4-pin Plug Connector (B1)		Cable (B2)		M12×1 4-pin 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	black	3	3
GND	null	2	null	white	null	2

### Sensor Structure



### Sensor Sealing



### Materials

#### Wetted Parts

Isolated Diaphragm: SS 316L(gold plated)

Pressure Port: SS 304/SS 316L

#### Non-wetted Parts

Housing: SS 304/SS 316L

Cable: PE/PUR/PVC

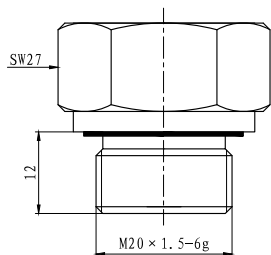
**Note:** first material of all parts showed is the most used one.

## Process Connection

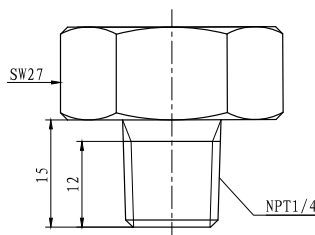
### Process Connection Dimensions

unit: mm

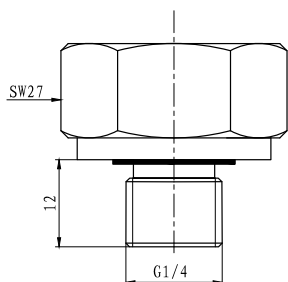
M20×1.5 male, end face seal (C1)



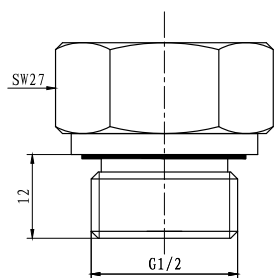
NPT1/4 male (C6)



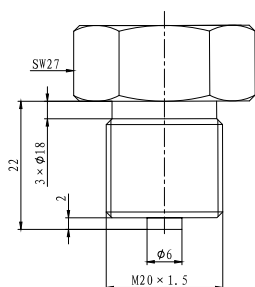
G1/4 male, end face seal (C2)



G1/2 male, end face seal (C3)



M20×1.5 male, waterline seal (C5)



## Ordering Guide

### MPM480GH Pressure Transmitter

Range	Measurement Range: 0mbar ~ 250mbar...70bar			
[0 ~ X]mbarL or barL	X: actual measured range, L means cable length when electrical connection is B2			
	Code	Pressure Type		
	G	gauge		
	A	absolute		
	S	sealed gauge		
	Code	Accuracy <sup>①</sup>		
	A1	±0.25%FS		
	A2	±0.5%FS		
	A3	±1%FS		
	Code	Electrical Connection <sup>②</sup>		
	B1	4-pin Plug Connector		
	B2	cable Connection		
	B4	M12×1 4-pin Plug Connector		
	Code	Output Signals		
	E	4mA~20mA DC		
	F	1V~5V DC		
	J	0V~5V DC		
	V	0V~10V DC		
	K1	0.5V~4.5V DC (5V~10V DC Power)		
	K2	0.5V~4.5V DC (15V ~ 28V DC Power)		
	W	0.5V~2.5V DC (3.2V~5V DC Power)		
	Code	Sensor Sealing		
	O2	Welding		
		Materials		
	Code	Isolated Diaphragm	Pressure Port	Housing
	22	SS 316L	SS 304	SS 304
	24	SS 316L	SS 316L	SS 316L
	Code	Process Connection		
	C1	M20×1.5 male, end face sealing		
	C2	G1/4 male, end face sealing		
	C3	G1/2 male, end face sealing		
	C6	NPT1/4 male		

MPM480GH [0 ~ 16]bar G A2 B1 E 22 C2 Complete Type Specification

## Ordering Notes

- "①" means accuracy, see "Accuracy" on page 2;
- "②" means electrical connection, when electrical connection is B1 or B4, terminal mating will not be provided by default; please specify it in the order if needed;
- Cable material is available for 3 types: PE cable is provided as default, if other material is needed, please specify it in the order;
- If metrology verification certificate is needed or there are other requirements, please contact us and specify it in the order.