

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	≤ 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 (B1type, B4type)
	-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 (-10°C ~ 60°C)
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 (- 10~60 °C)
 Test Standard: GB/T 17614.1-2015/IEC60770-1:2010;

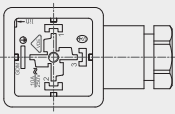
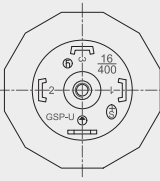

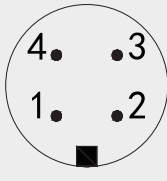
Output Signals

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 -10°C ~ 60°C

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

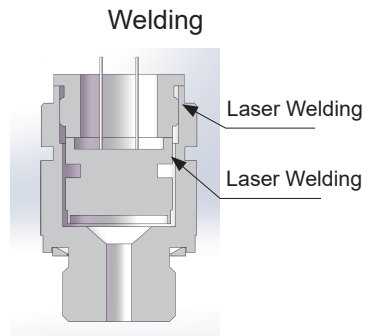
Electrical Connection

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

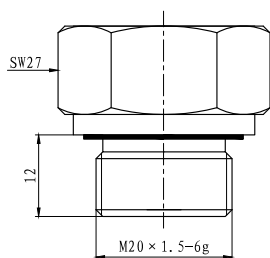
Note: first material of all parts showed is the most used one.

Process Connection

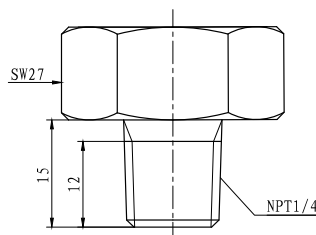
Process Connection Dimensions

(unit: mm)

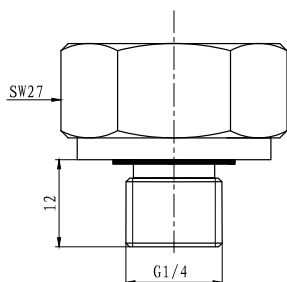
M20×1.5 male, end face seal (C1)



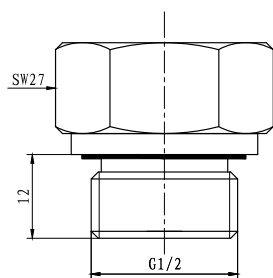
NPT1/4 male (C6)



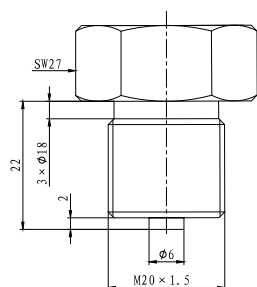
G1/4 male, end face seal (C2)



G1/2 male, end face seal (C3)



M20×1.5 male, waterline seal (C5)



Ordering Guide

MPM480GH Pressure Transmitter

Range	Measurement Range: 0 ~ 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 ^①
	A1 ±0.25%FS
	A2 ±0.5%FS
	A3 ±1%FS
	Code Electrical Connection ^②
	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
	Code 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.