

HPM81 Monocrystalline Silicon Differential Pressure Transmitter



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Overview

HPM81 Monocrystalline Silicon Differential Pressure Transmitter adopts Germany advanced MEMS technology to make the monocrystalline silicon core of sensor and global original monocrystalline twin beams suspension design to achieve the international leading functions of high accuracy, super high over voltage and stability. The built-in professional signal processing module can perfectly combine the static pressure compensation and temperature compensation and provide super high measuring accuracy and long-term stability under the wide range of static pressure and temperature change. HPM81 can accurately measure differential pressure and transfer it to 4-20mA DC signal output. This product can be operated locally through three buttons or operated remotely via manual operator, configuration software and mobile APP. Without affecting the signal output, it also can display and configure.

Application: petroleum, chemical, mechanical equipment, electric power, paper, steel, cement and other accurate measurement of pressure and differential pressure occasions

Features

- .high accuracy and high stability
- .excellent environment suitability
- .intelligent static pressure compensation and temperature compensation to prevent the transmitter from the effect of temperature, static pressure and over voltage and control the comprehensive measuring error to the minimum
- .flexible range of compression
- .great operability and convenience
- .with 5 bit LCD digital display with backlight
- .multiple display functions(mA、 Pa、 kPa、 MPa、 bar、 mbar、 %、 psi、 mmH₂O)

.built-in three-button with quick operation and field adjustment functions

.with various anti-corrosion materials

.comprehensive self-diagnostic function

Technical Parameters

Measuring Medium :liquid, gas, steam

◆ Measuring Range

Pressure Range	kPa	mbar	Unilateral Overpressure	Bilateral Static
M1	-40~40	-400~400	3MPa	25MPa
M2	-100~100	-1000~1000	8MPa	25MPa
M3	-200~200	-2000~2000	8MPa	25MPa
M4	-400~400	-4000~4000	8MPa	25MPa
L1	-4000~4000	-40000~	10MPa	25MPa

◆ Output Signal:(4~20)mADC+HART protocol

◆ Permissible Load Resistance:0~600Ω (DC 24V)

Note: When communicates with hand-held communicator, it requires at least 250Ω load resistance.

◆ Voltage:

General Service	DC10.5~45V
Intrinsic safety and explosion-proof	DC10.5~26V

◆ Zero-scale Migration: migrate within the range between -20% of maximum range and 20% of maximum range

◆ Output Mode: linear output, square root output (can be adjusted remotely by configuration software)

◆ Environment Temperature: -40~85°C (when fill in fluorocarbon oil:-10~60°C)

◆ Storage Temperature: -40~90°C

◆ Accuracy:

Range	Reference Accuracy
M1,M2,M3,M4,L1	TD 1:1...15:1 =±0.075% TD > 15:1 =±(0.0015×TD+0.053) %

*TD- Range Rate

- ◆ Environment Temperature Influence: Total influence value/28°C (50°F)

Range	Influence
M1,M2,M3	±[0.08% of range +0.015% of maximum
M4,L1	±[0.08% of range +0.03% of maximum

- ◆ Static Pressure Influence: ±0.05% of range/10MPa
- ◆ Overpressure Influence: ±0.05% of maximum range/10MPa
- ◆ Stability: ±0.05% of maximum range /12 months
- ◆ Explosion-proof: Exd II CT6

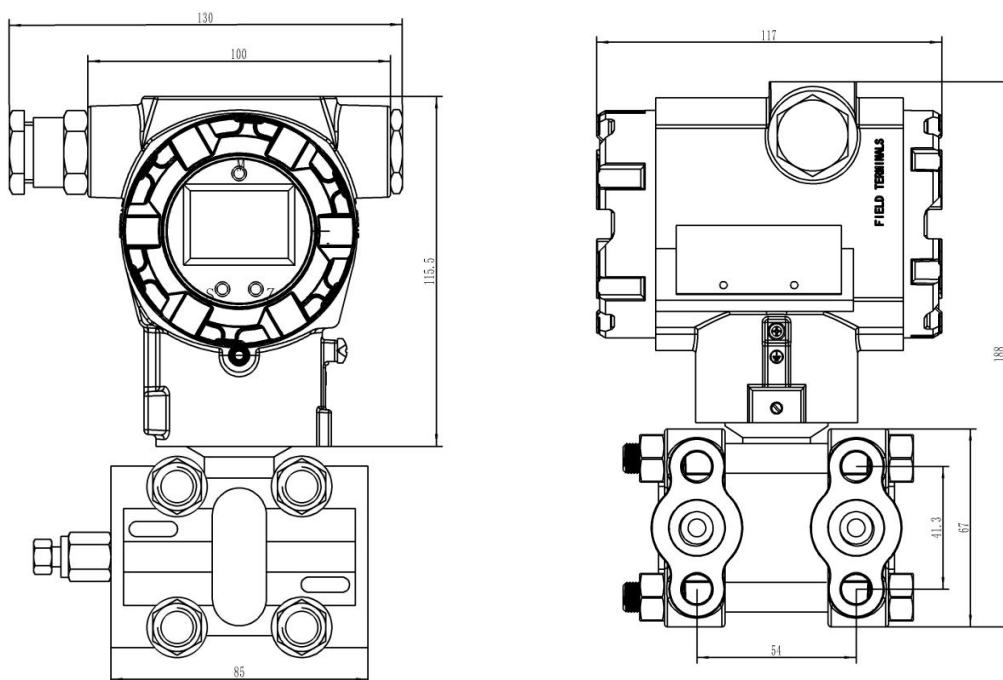
Structure Material

- ◆ Material for liquid connection: see the selection guide for details

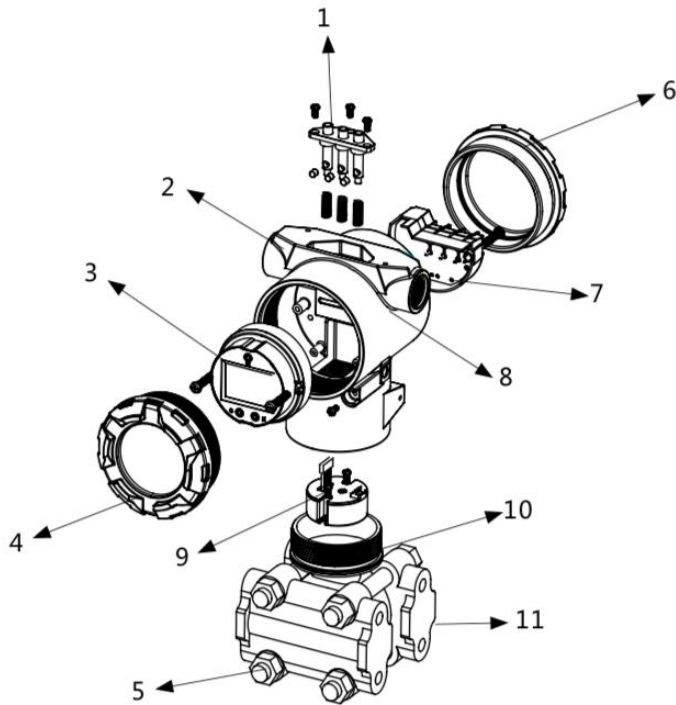
Material code	Isolation Diaphragm	Install Splint
	Isolation diaphragm :SUS316L	
S	Isolation diaphragm:	SUS316L
H	hastelloy C	SUS316L
T	Isolation diaphragm:	SUS316L
G	tantalum	SUS316L
	Isolation diaphragm: gold plated	

- ◆ Liquid contact sealing ring: fluorine rubber
- ◆ Transmitter shell: low copper aluminum die casting + polyurethane coating
- ◆ Transmitter shell cover: low copper aluminum die casting + polyurethane coating
- ◆ Protection grade: IP66
- ◆ Nameplate: SUS304
- ◆ Filling oil: silicone oil, fluorine oil, sanitary oil, etc
- ◆ External dimension: according to the external drawing
- ◆ Weight: about 2.9-3.1kg (body)
- ◆ Cable inlet: M20×1.5

Structure Drawings(unit:mm)

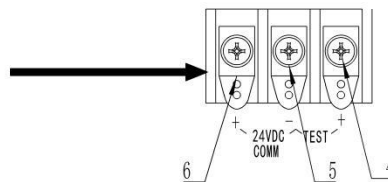
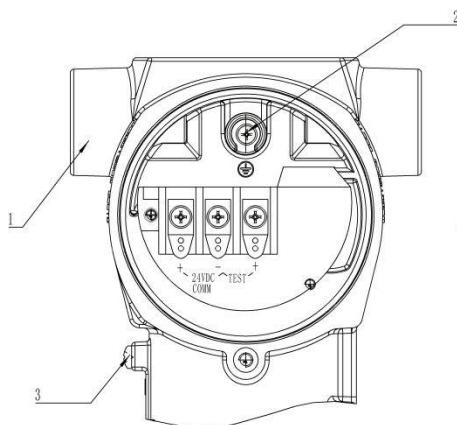


Explosive View



- 1. Dry spring button
- 2. Electrical interface
- 3. Display the header
- 4. The cover
- 5. Bolt
- 6. The blind cover
- 7. Terminal blocks
- 8. Shell
- 9. Sensor module
- 10. Sensor connector
- 11. Install splint

Electrical Connection



- 1 Housing
- 2 Internal GND
- 3 External GND
- 4 4...20mA test signal
- 5 Power -
- 6 Power +

Ordering Guide

Item NO.	Code							Illustration
HPM81	-	-	-	-	-	-	-	Monocrystalline Silicon Differential Pressure Transmitter
Output Signal	H	-	-	-	-	-	-	4~20mA, HART Protocol Digital Communication
Measuring Range (diaphragm capsule)	M1	-	-	-	-	-	-	Range :-40~40kPa Range:-100~100kPa Range:-200~200kPa Range:-400~400kPa Range:-4~4MPa
	M2	-	-	-	-	-	-	
	M3	-	-	-	-	-	-	
	M4	-	-	-	-	-	-	
	L1	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
Material of Contacted Liquid	S	-	-	-	-	-	-	Isolation diaphragm:SUS316L Clamping Plate :SUS316 Isolation diaphragm: Hastelloy C Clamping Plate:SUS316 Isolation diaphragm:Tantalum Clamping Plate:SUS316 Isolation diaphragm: Gold Plating Clamping Plate:SUS316
	H	-	-	-	-	-	-	
	T	-	-	-	-	-	-	
	G	-	-	-	-	-	-	
Filling Liquid	S	-	-	-	-	-	-	Silicone Oil Fluorocarbon Oil Vegetable Oil
	F	-	-	-	-	-	-	
	O	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
Thread Spec	N14F	-	-	-	-	-	-	1/4NPT Internal Thread
	-	-	-	-	-	-	-	
Seal Ring	F	-	-	-	-	-	-	Fluororubber Buna-n O-Ring Laser Welding
	D	-	-	-	-	-	-	
	J	-	-	-	-	-	-	
	-	-	-	-	-	-	-	
Electrical Connection	M20	-	-	-	-	-	-	M20x1.5 cable gland
	-	-	-	-	-	-	-	

Display Header	D - - - - N - - - -	with LCD display N/A
2-inch Installment Holder	H - - - V - - - N - - -	Tablet Holder Right-angle Holder N/A
Holder Material	T - - - S - - X - - -	Sherardize on Carbon Steel Stainless Steel 304 Other Requirements
Explosion-Proof	d - N -	Explosion-proof Type, Exd II CT6 N/A
Order Code	V	Special Requirements
Reference Item: HPM81-H-M1-S-S-N14F-F-M20-D-V-T-N-V		