

# HPM85 Monocrystalline Silicon Diaphragm Sealed Differential Pressure Transmitter



Nanjing Hangjia Electronic Technology Co., Ltd.

## Overview

HPM85 Monocrystalline Silicon Diaphragm Sealed 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. HPM85 can accurately measure differential pressure and transfer it to 4-20mA 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、 mmH<sub>2</sub>O)
- .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:

Range	kPa	mbar	Unilateral Overpressure	Bilateral Pressure	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	-40000~40000	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.

◆ Supply 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℃ (when fill in fluorocarbon oil:-10~60℃)
- ◆ Storage Temperature: -40~90℃
- ◆ 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℃ (50°F)

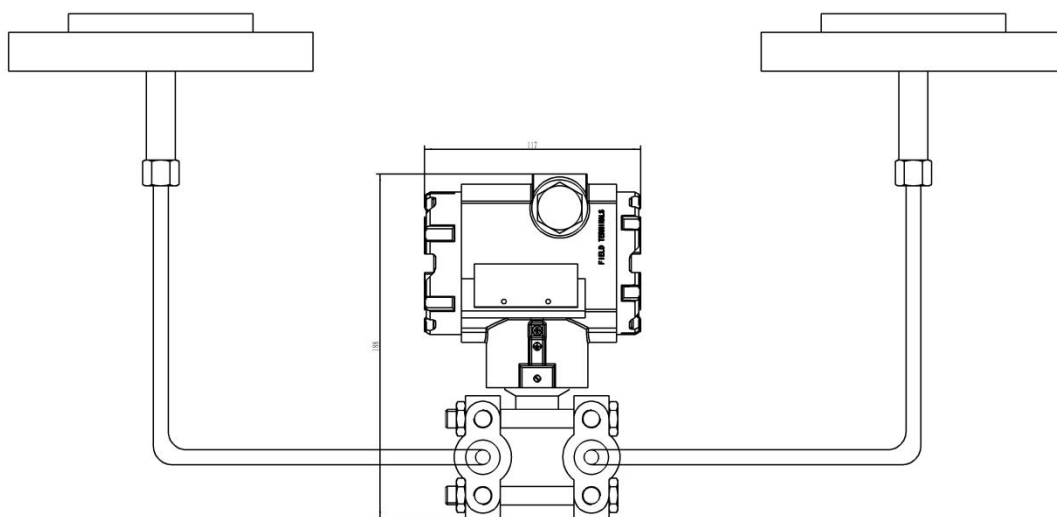
Range	Influence
M1,M2,M3	$\pm[0.08\% \text{ of range} + 0.015\% \text{ of maximum range}]$
M4,L1	$\pm[0.08\% \text{ of range} + 0.03\% \text{ of maximum range}]$

- ◆ Static Pressure Influence:  $\pm 0.05\%$  of range/10MPa
- ◆ Overpressure Influence:  $\pm 0.05\%$  of maximum range /10MPa
- ◆ Stability:  $\pm 0.05\%$  of maximum range /12 months
- ◆ Explosion Proof: Ex ia II CT4; Exd II CT6

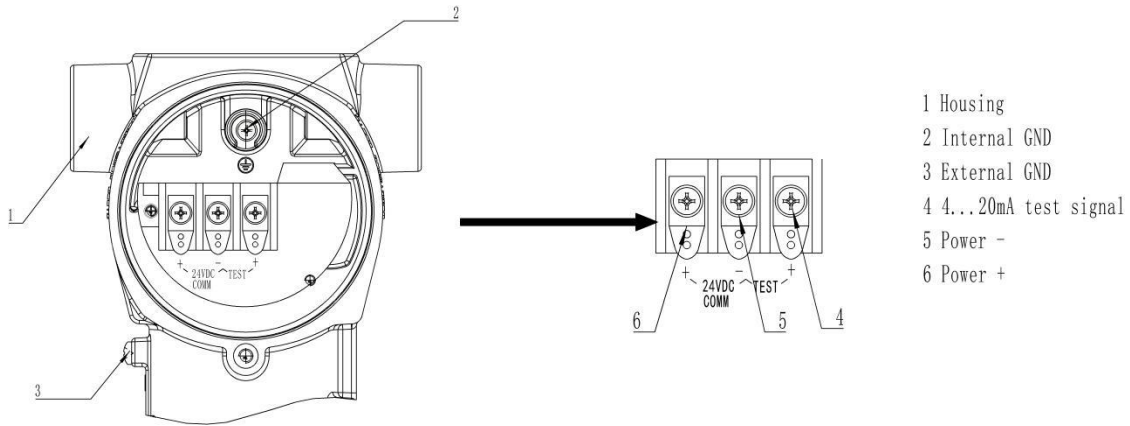
## Structure Material

- ◆ Material for liquid connection: see the selection guide for details
- ◆ 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
- ◆ Cable inlet: M20×1.5

## Structure Drawings



### Electrical Connection



### Ordering Guide

Item NO.	Code										Illustration
HPM85	-	-	-	-	-	-	-	-	-	-	Monocrystalline Silicon Differential Pressure Transmitter
Output Signal	H	-	-	-	-	-	-	-	-	-	4~20mA, HART Protocol Digital Communication
Measuring Range (diaphragm capsule)	M1	-	-	-	-	-	-	-	-	-	Range:-40~40kPa
	M2	-	-	-	-	-	-	-	-	-	Range:-100~100kPa
	M3	-	-	-	-	-	-	-	-	-	Range:-200~200kPa
	M4	-	-	-	-	-	-	-	-	-	Range:-400~400kPa
	L1	-	-	-	-	-	-	-	-	-	Range:-4~4MPa
Material of Contacted Liquid	S	-	-	-	-	-	-	-	-	-	Isolation diaphragm:SUS316L
	H	-	-	-	-	-	-	-	-	-	Isolation diaphragm: Hastelloy C
	T	-	-	-	-	-	-	-	-	-	Isolation diaphragm:Tantalum
	G	-	-	-	-	-	-	-	-	-	Isolation diaphragm: Gold Plating
Filling Liquid	S1	-	-	-	-	-	-	-	-	-	Normal Temperature Silicon Oil
	S2	-	-	-	-	-	-	-	-	-	High Temperature Silicon Oil
	F	-	-	-	-	-	-	-	-	-	Fluorocarbon Oil
Flange Size/Material	54	-	-	-	-	-	-	-	-	-	2-inch(50mm, DN50)/SUS304
	56	-	-	-	-	-	-	-	-	-	2-inch(50mm, DN50)/SUS316L
	5F	-	-	-	-	-	-	-	-	-	2-inch(50mm, DN50)/other requirements
	84	-	-	-	-	-	-	-	-	-	3-inch(80mm, DN80)/SUS304
	86	-	-	-	-	-	-	-	-	-	3-inch(80mm, DN80)/SUS316L
	8F	-	-	-	-	-	-	-	-	-	3-inch(80mm, DN80)/other requirements
Flange Spec	A	-	-	-	-	-	-	-	-	-	Standard Pressure
	B	-	-	-	-	-	-	-	-	-	ANSI 150 2MPa
	C	-	-	-	-	-	-	-	-	-	ANSI 300 5MPa
	D	-	-	-	-	-	-	-	-	-	ANSI 600 11MPa
	E	-	-	-	-	-	-	-	-	-	ANSI 900 15MPa
	F	-	-	-	-	-	-	-	-	-	ANSI 1500 26MPa
	G	-	-	-	-	-	-	-	-	-	DIN PN 10/16 1.6MPa
	H	-	-	-	-	-	-	-	-	-	DIN PN 25/40 4MPa
	I	-	-	-	-	-	-	-	-	-	DIN PN 64 6.4MPa
	J	-	-	-	-	-	-	-	-	-	DIN PN 100 10MPa

		DIN PN 160	16MPa
Length of Thin Tube	(M,N) - - - - -	0~10m, for example: on the side of high pressure 2m, on the side of low pressure 4m, express as (02,04)	
Seal Ring	F - - - - - D - - - - - T - - - - -	Fluororubber Buna-n O-Ring Teflon	
Electrical Connection	M20	M20x1.5	
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: HPM85-H-M1-S-S1-54-F-(02,04)-F-M20-D-V-T-N-V			