HPM410-S Threaded Mount Level Transmitter

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Overview

HPM410-S threaded mount liquid level transmitter adopts a fully sealed submersible structure. This type of transmitter uses a pressure sensor that has undergone long-term stability and reliability tests and a high-precision signal conditioning circuit installed in a stainless-steel shell. The integrated structure and standardized signal provide convenience for on-site use and automatic control. The dedicated cable is sealed and connected to the shell and can be used in liquids compatible with the structural materials of the transmitter for a long time. The shell of this product adopts a full welding process, and the connections of the shell, cable and other links are all designed with reliable sealing. The internal full potting process ensures that the product has a good service life.

The product can be used to measure the liquid level by threaded fixing, or it can be used to measure the pressure of underwater equipment or underwater pipelines by threaded connection.

Application

- Rivers and Lakes
- Pools and water tanks
- Groundwater, water level monitoring, urban water supply and drainage, etc.
- Underwater equipment or underwater pipelines
- Marine

Features

- Integrated drop-in structure, simple and convenient
- Can measure the pressure of underwater equipment or pipelines
- Multiple protection and sealing structure design, IP68 protection
- Double anti-condensation and anti-condensation technology
- Digital compensation over a wide temperature range, good stability
- Lightning protection optional

Technical Parameters

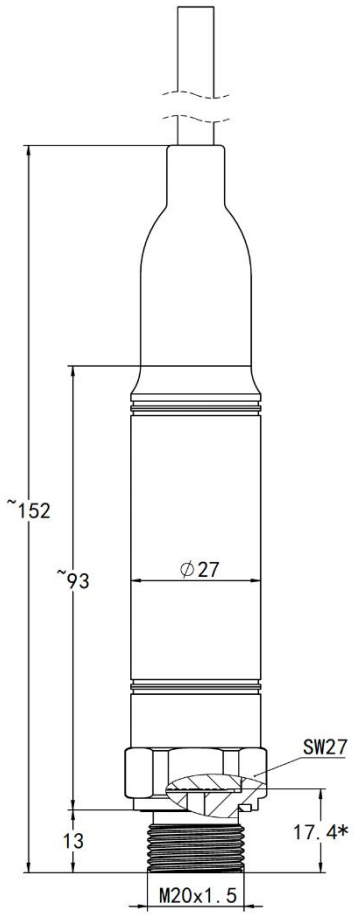
Measuring Medium	Various liquids or gases compatible with contact materials
Measuring Range	Liquid level: 0~1…500mH_2O* Pressure: 0~10kPa…60MPa** *The maximum immersion depth of this product is 500 meters * * The overall shell pressure resistance is 5MPa
Overload	1.5 times of full range scale
Output Signal/Power Supply(option1)	2-wire 4~20mA / Vs=8~30V
Output Signal/Power Supply(option2)	2-wire 4~20mA+HART / Vs=12~32V

Output Signal/Power Supply(option3)	3-wire 0~5V / Vs=8.5~30V or Vs=3.1~8V (needs to be 0.4V higher than the maximum output voltage.)
Output Signal/Power Supply(option4)	3-wire 0~10V / Vs=12~30V
Output Signal/Power Supply(option5)	4-wire Modbus-RTU/RS485 / Vs=10~30V
Output Signal/Power Supply(option6)	One way relay output/ Vs=18~30V
Accuracy	±0.5% FS@25℃(typical) ±0.2% FS@25℃(optional)
Long term stability	±0.25%FS/year(typical accuracy) ±0.2%FS/year(optional accuracy)
*Accuracy conforms to IEC 60770 (non-linear error, hysteresis, repeatability)	
Compensation temperature range	0~70℃ (0.5G accuracy) -10~80℃ (0.2G accuracy) Note: Please consult if the measuring range is ≤20kPa
Temperature Coefficient of Zero	±1.0%FS Reference 25℃, within temperature compensation range (≤20kPa range, temperature drift ±1.5%FS , 0~70℃)
Temperature Coefficient of Full Scale	±1.0%FS Reference 25℃, within temperature compensation range (≤20kPa range, temperature drift ±1.5%FS , 0~70℃)
Working Temperature	-40~80℃
Measuring medium temperature	-40~80℃
Storage Temperature	-40~85℃
Protection level	IP68
Reverse polarity protection	No damage, circuit does not work
Insulation resistance	>20MΩ, 500VDC
Dielectric strength	<2mA 500VAC (Apply 500VAC 50Hz test voltage for 1 minute without breakdown or arcing)

Structure Material

Code	Part	Note
S4	Probe shell	304
S6		316L
Ti		titanium or titanium alloy
M1	Pressure sensor	Silicon Piezoresistive,316L
M2		Silicon Piezoresistive, titanium & titanium alloy
FK	Pressure sensor sealing ring	Fluorine rubber FKM (working temperature: -20~200℃)
NB		Nitrile rubber NBR (working temperature: -40~120℃)
C2U	Cable	PU polyurethane cable, external diameter (7.2±0.2) mm
C2N		NBR nitrile cable, external diameter (7.2±0.2) mm

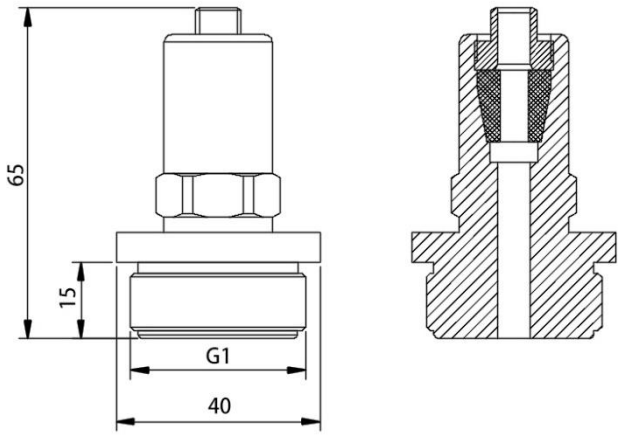
Structure Drawings (Unit: mm)



*This dimension is the distance from the sensing diaphragm to the bottom

Installation (Unit: mm)

Threaded Mounting Parts (Ordering Code: W1)

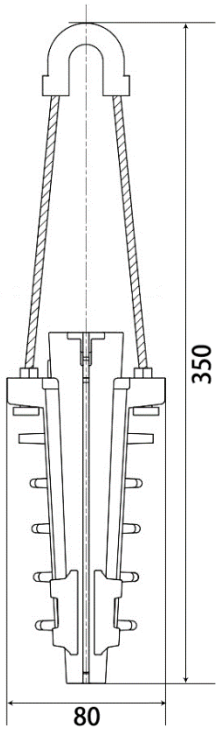


1. Used to fix the entire product at the top

2. Except for G1 thread, other threads can be customized if required

Weight ~450g

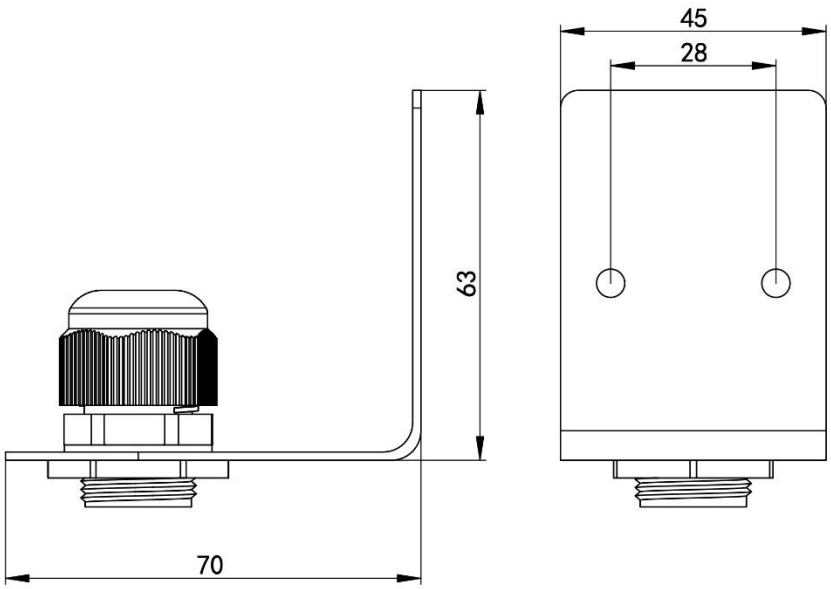
Cable clip (Ordering Code: W8)



Used to fix the entire product at the top

Weight ~340g

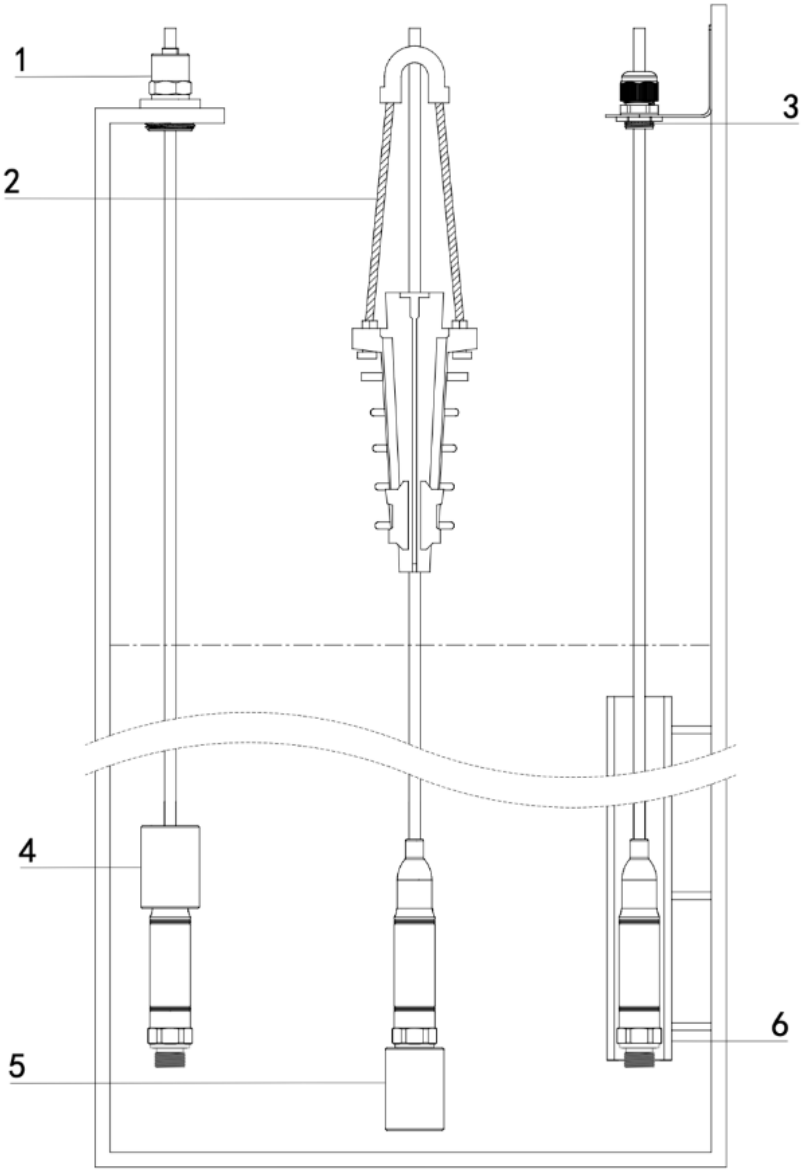
Right-angle mounting bracket kit (Ordering code: W4) dimensional drawing



Used to secure and support the entire product at the top.

Weight: ~75g

Installation Diagram



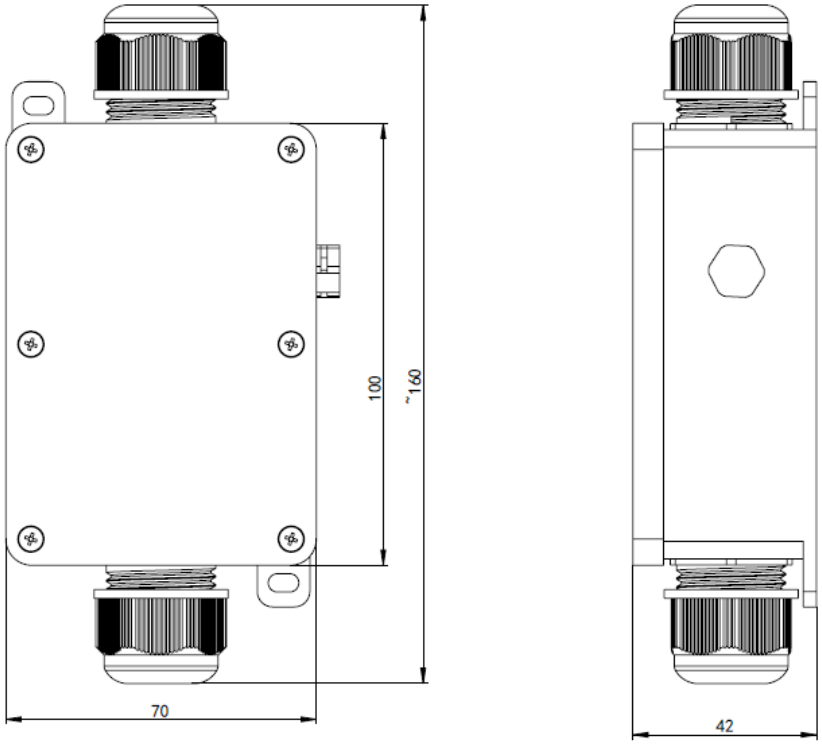
1. Threaded Mounting Parts(W1)
2. Cable clip(W8)
3. Right-angle mounting bracket kit (W4)
4. Top connection heavy hammer(W2)
5. Bottom connection heavy hammer(W3)
6. Protective tube

Note:

1. This product can be fixed to the bottom of the liquid via the connecting thread at the bottom of the probe to measure the liquid level.
2. This product can be used to measure the pressure of underwater equipment or underwater pipelines via a threaded connection.

Accessories (Unit: mm)

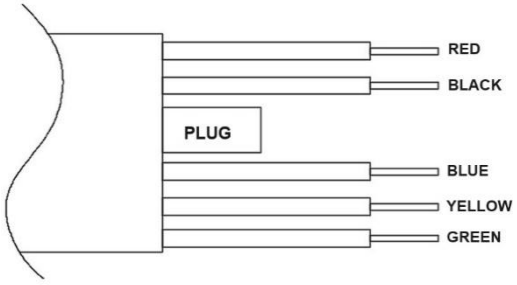
Waterproof and breathable junction box (W9)



1. Junction box with IP68 protection rating
2. Used to extend the ventilated cable and ensure the product's waterproof and breathable function
3. Recommended cable diameter range is 5-8mm. After wiring, ensure the waterproof cable connectors at both ends are tightened securely.

Weight: ~150g

Electrical Interface

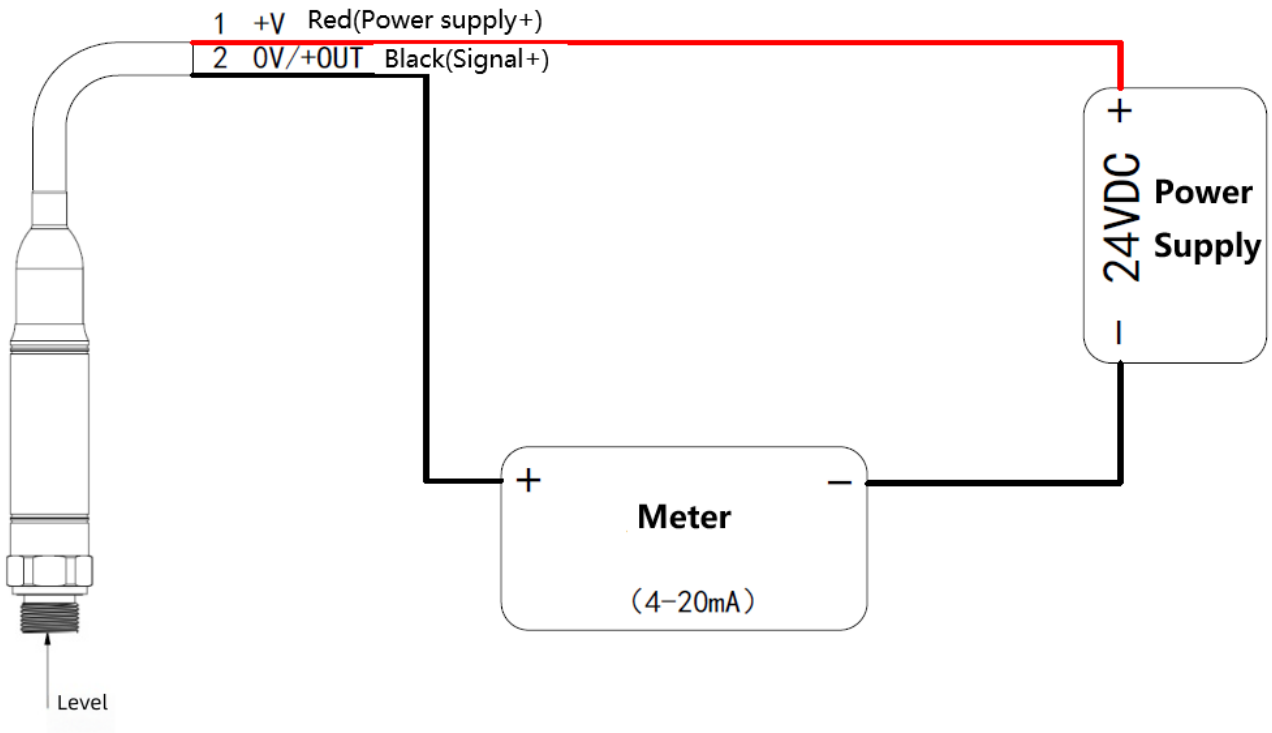


Wire color	2-wire 4 ~ 20mA	3-wire voltage	Modbus-RTU/RS485
Red	Power supply+(+V)	Power supply+(+V)	Power supply+(+V)
Black	Power supply-(0V/+OUT)	Common (GND)	Power supply-(0V)
Blue	-	Output+(+OUT)	-
Yellow	-	-	RS485A
Green	-	-	RS485B

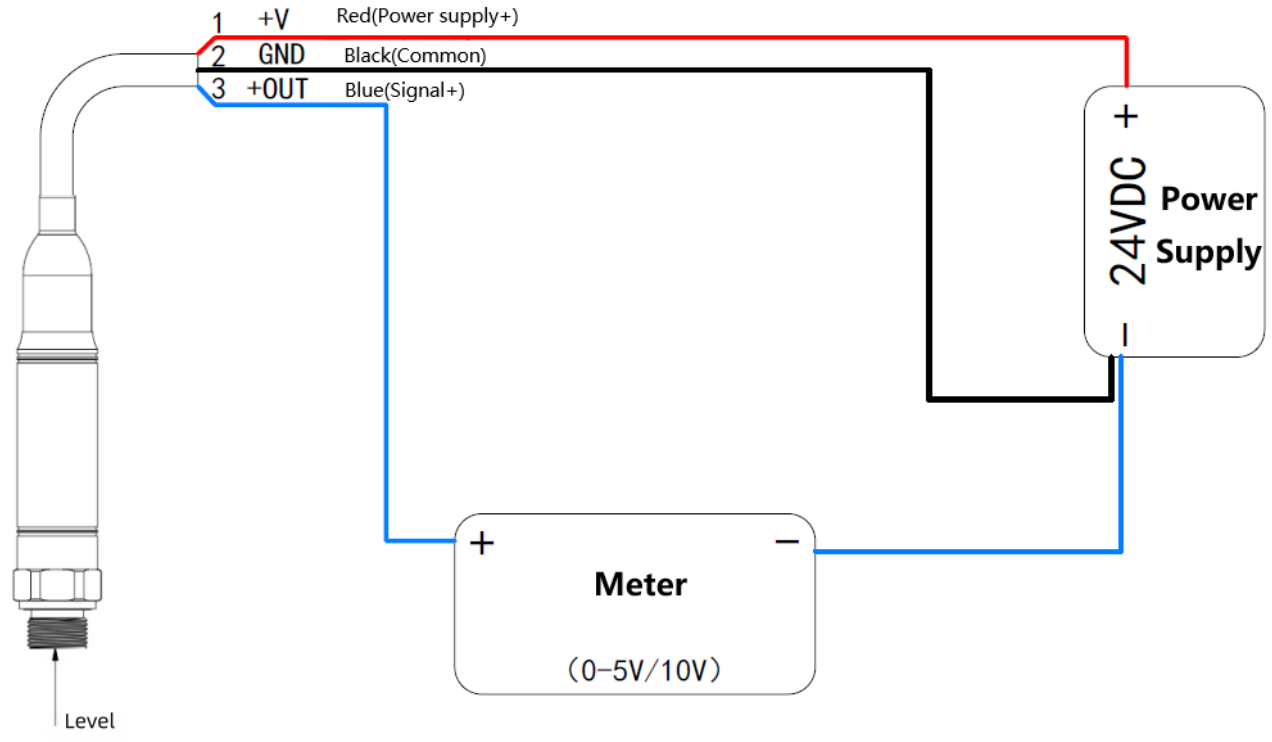
⚠ Gauge pressure products should be referenced to current atmospheric pressure, and the breathable plugs should be kept dry and prevented from falling out.

Electrical Connection

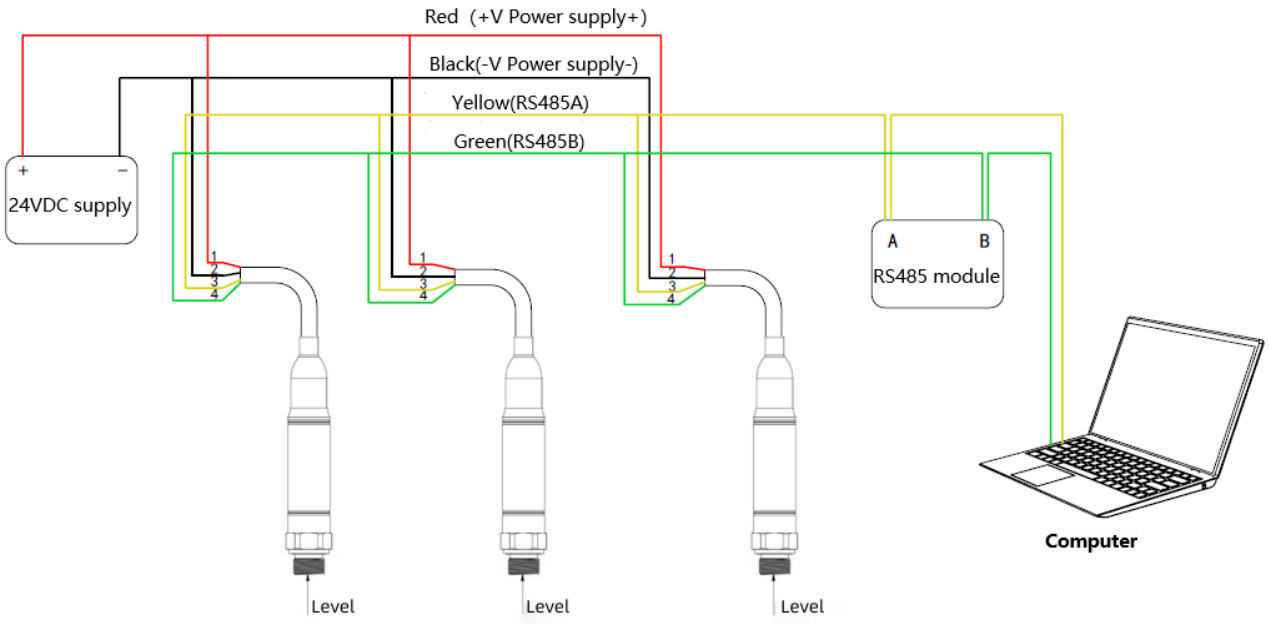
2-wire 4~20mA output



3-wire voltage output



Modbus-RTU/RS485 output



Ordering Guide

Item NO.	Type						
HPM410-S	Threaded mounting level transmitter						
	Pressure Range	Measuring Range					
	[0 ~ X]mH$_2$O (Ln)	X is measuring range Ln is the length of cable					
		Code	Output Signal				
		B1	(4 ~ 20)mA				
		B3	(0 ~ 10)V				
		B4	(0 ~ 5)V				
		B6	(0.5 ~ 4.5)V				
		B7	RS485				
		B9	Relay switch signal				
			Code	Cable Material			
			C2N	NBR Nitrile			
			C2U	PU Polyurethane			
				Code	Mounting method		
				N	NA		
				W1	Threaded mounting parts		
				W2	Top weight		
				W3	Bottom weight		
				W4	Right-angle mounting bracket kit		
				W8	Clip		
					Code	Pressure sensor	
					M1	316L	
					M2	Titanium or Titaniumalloy	
						Code	Probe shell material
						S4	304
						S6	316L
						Ti	Titanium or Titaniumalloy
							Code / Additional Functions
							QF: Factory report
							R1: CE
							W9: Waterproof and breathable junction box
							J5: 0.5G
							J2: 0.2G
							FL: Lightning protection
							FK: FKM sealing ring
							NB: NBR sealing ring
							V24: Power supply 24VDC
							V5: Power supply 5VDC
							Other requests
Eg: HPM410-S	[0 ~ 5]mH2O (L7)	B1	C2U	N	M1	S4	J5 FK V24

Certification Information

Factory certification	
Certification organization	CQM
Quality management system	ISO 9001:2015
Certification scope	Research, development and manufacture of pressure transmitter and temperature transmitter
Certificate No.	00223Q21711R1S

CE	
Certification organization	ECM
Certification scope	Pressure Transmitter
Standard	EN IEC 61000-3-2:2019+A1:2021
	EN IEC 61000-3-3:2013+A1:2019+A2:2021
	EN IEC 61000-6-4:2019, EN IEC 61000-6-2:2019
Certificate No.	6G241223.NHEWC83