

HPM410-C Anti sand and waterweed type Level Transmitter



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Overview

HPM410-C Anti sand and waterweed type 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 dedicated circuit installed in a stainless-steel shell. The integrated structure and standardized signal provide convenience for on-site use and automatic control. The shell of this product adopts a full welding process. At the same time, the connections of various links such as the shell and cable are reliably sealed with multiple designs. The internal full potting process ensures that the product has a good service life.

The unique design of this product is the use of a customized filter ring structure, which can effectively prevent the entanglement of impurities such as water plants in rivers and lakes and the blockage of granular impurities such as silt. The filter ring is easy to disassemble and clean and can be reused many times. This product can continuously and stably monitor the changes in liquid level in a long-term and stable environment of sedimentation and water plants.

Application

- ◆ Rivers and Lakes
- ◆ Pools and water tanks
- ◆ Groundwater, water level monitoring, urban water supply and drainage, etc.
- ◆ Marine

Features

- ◆ Filter ring structure
- ◆ Anti sand and waterweed design
- ◆ Liquids containing sand and other particulate impurities
- ◆ Multiple protection and sealing structure design, IP68 level
- ◆ Digital compensation in a wide temperature range, good stability
- ◆ Lightning protection optional

Technical Parameters

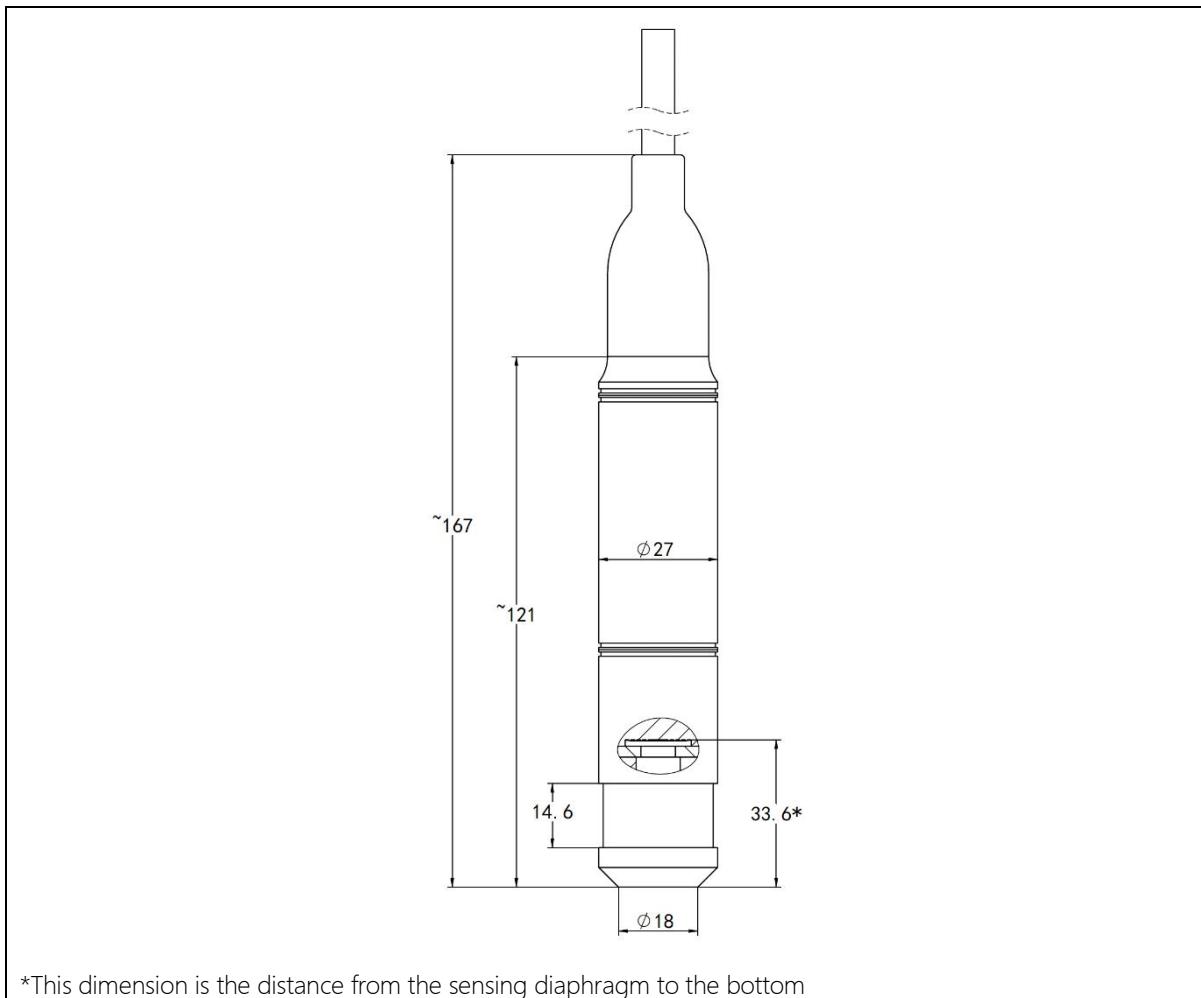
Measuring Medium	Various liquids or gases compatible with contact materials
Measuring Range	0~1...500mH ₂ O Note: The measurement unit can be converted to

	ftH ₂ O@4°C, inH ₂ O@4°C, m, mm, etc. When using m, mm, etc. as the unit, the density value of the measured medium needs to be given
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°C(typical) ±0.2% FS@25°C(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°C (0.5G accuracy) -10~80°C (0.2G accuracy) Note: Please consult if the measuring range is ≤20kPa
Temperature Coefficient of Zero	±1.0%FS Reference 25°C, within temperature compensation range (≤20kPa range, temperature drift ±1.5%FS , 0~70°C)
Temperature Coefficient of Full Scale	±1.0%FS Reference 25°C, within temperature compensation range (≤20kPa range, temperature drift ±1.5%FS , 0~70°C)
Working Temperature	-40~80°C
Measuring medium temperature	-40~80°C
Storage Temperature	-40~85°C
Protection level	IP68
Reverse polarity protection	No damage, circuit does not work
Electromagnetic Compatibility	Compliant with EN 61326
Insulation resistance	>20MΩ, 500VDC
Dielectric strength	<2mA @500VAC (Apply 500VAC 50Hz test voltage for 1 minute without breakdown or arcing)

Structure Material

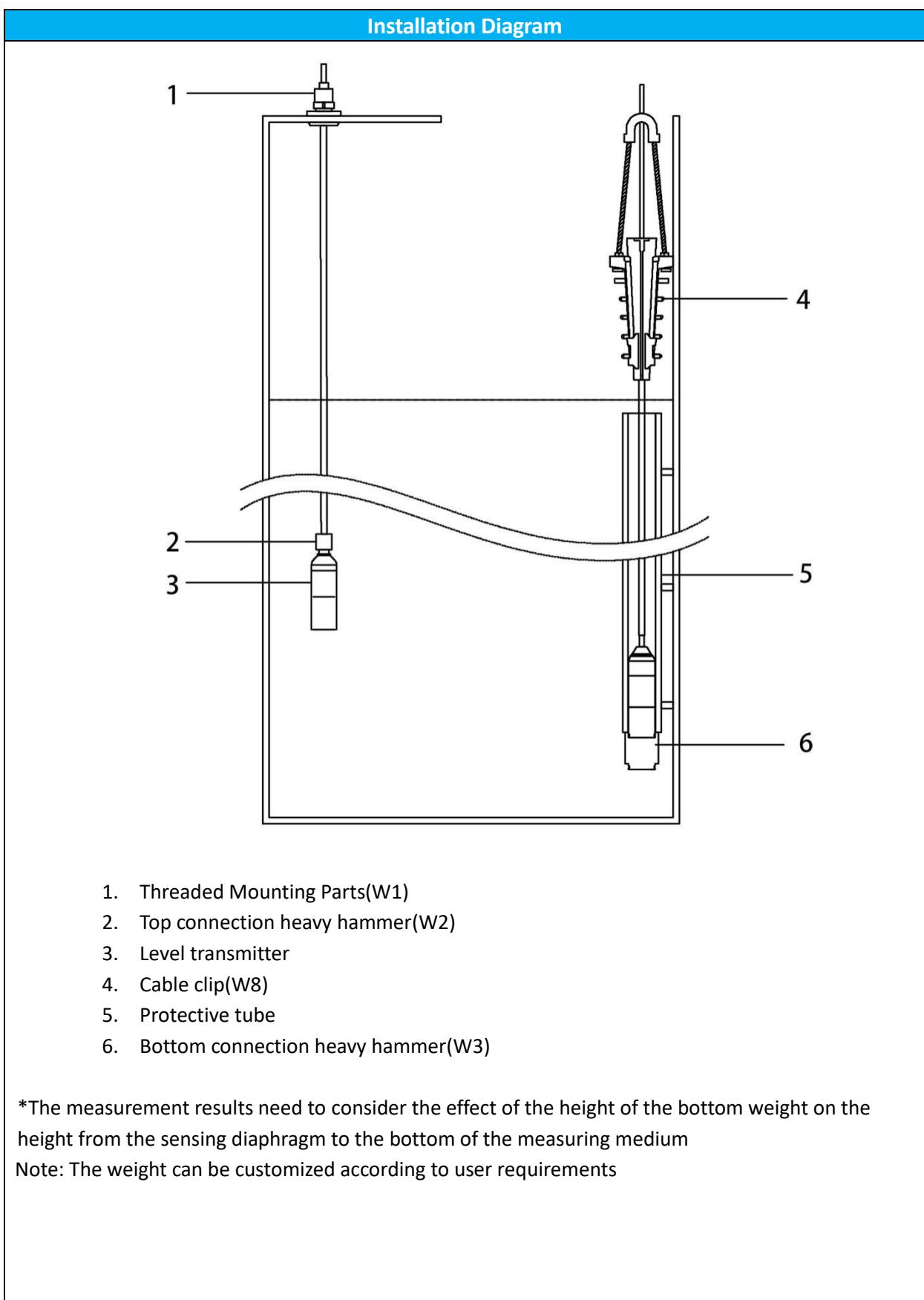
Code	Part	Note
S4	Probe shell	304
S6		316L
Ti		titanium or titanium alloy
M1	Pressure sensor	Silicon Piezoresistive, 316L
M2		Silicon Piezoresistive, titanium & titanium alloy
FK	Pressure sensor sealing ring	Fluorine rubber FKM (working temperature: -20 ~ 200°C)
NB		Nitrile rubber NBR (working temperature: -40 ~ 120°C)
C2U	Cable	PU polyurethane cable, external diameter (7.2±0.2) mm
C2N		NBR nitrile cable, external diameter (7.2±0.2) mm
MS6	Filter ring	SS316L material
P		Ceramic material

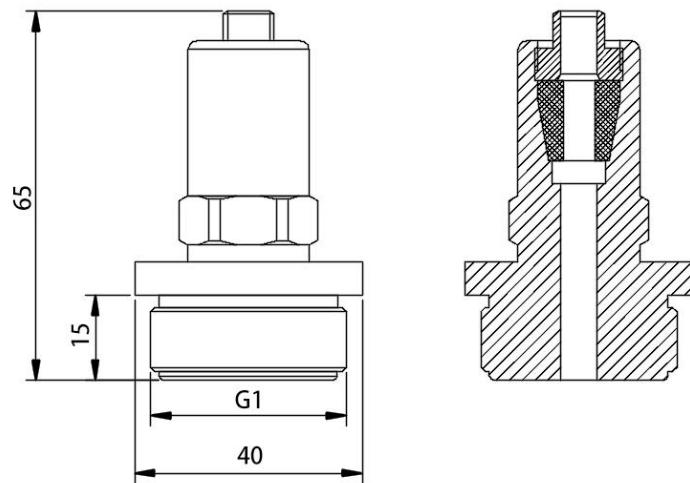
Structure Drawings (Unit: mm)



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

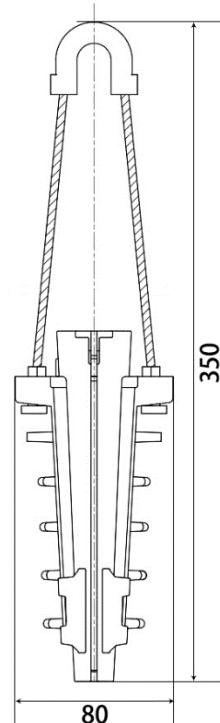
Installation (Unit: mm)



Threaded Mounting Parts (Ordering Code: W1)

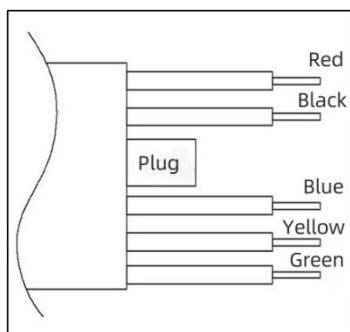
1. Used to fix the entire product at the top
2. Except for G1 thread, other threads can be customized if required

Weight ~450g

Cable clip (Ordering Code:W8)

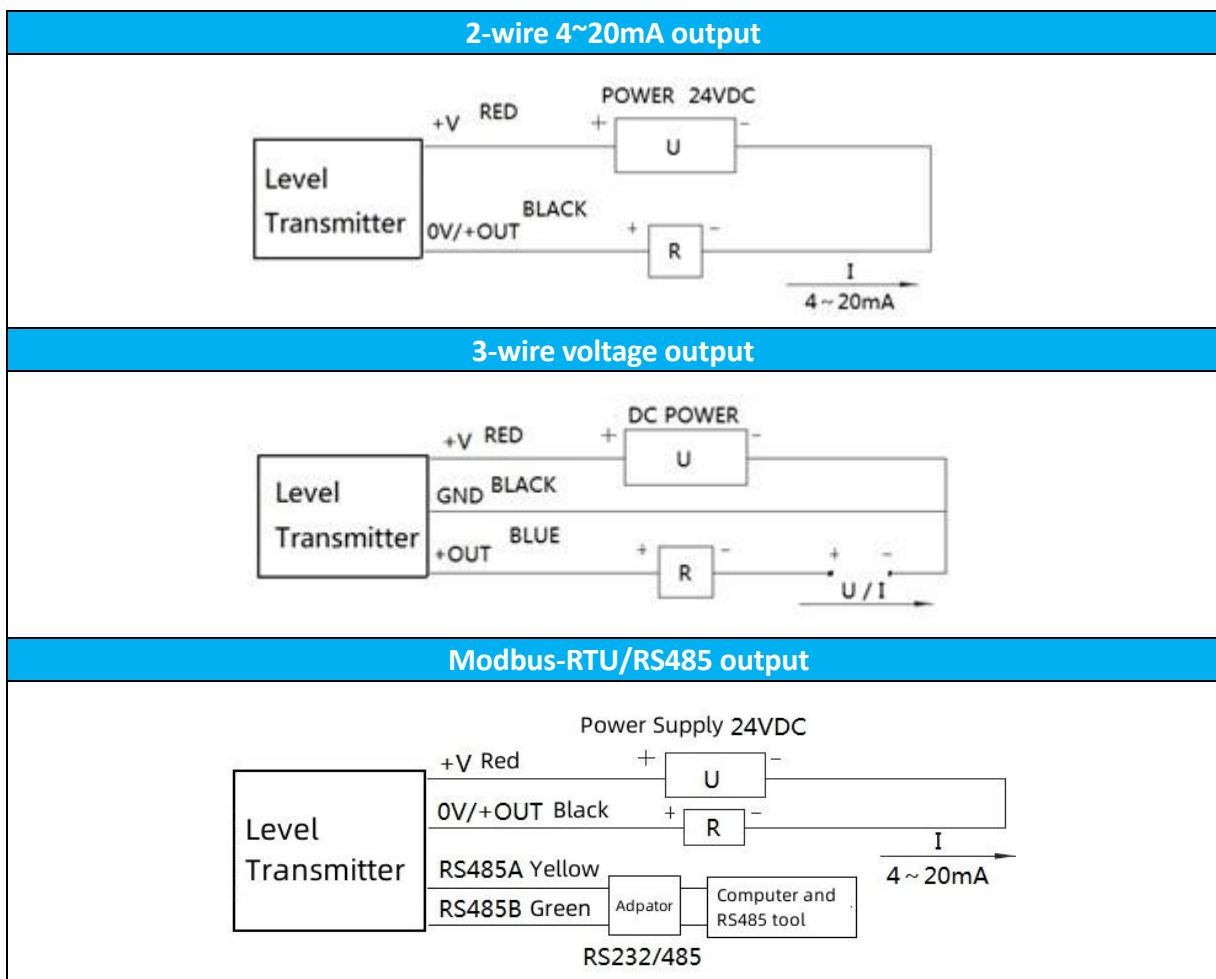
Used to fix the entire product at the top

Weight ~340g



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.



Ordering Guide

Item NO	Type							
HPM410-C	Anti sand and waterweed type Level Transmitter							
	Pressure Range	Measuring Range						
	[0 ~ X]mH ₂ O (L)	X is measuring range L 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					
		W8	Clip					
		Code	Pressure sensor					
		M1	316L, silicon piezoresistive					
		M2	Titanium, silicon piezoresistive					
		Code	Probe shell material					
		S4	304					
		S6	316L					
		Ti	Titanium or Titaniumalloy					
		Code	Additional Functions					
		QF	Factory report					
		R1	CE					
		J5	0.5G					
		J2	0.2G					
		FL	Lightning protection					
		MS6	316L filter ring					
		P	Ceramic filter ring					
		FK	FKM sealing ring					
		NB	NBR sealing ring					
		V24	Power supply 24VDC					
		V5	Power supply 5VDC					
			Other requests					
Eg: HPM410-C	[0 ~ 5]mH ₂ O (L)	B1	C2U	N	M1	S4	J5 MS6 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.	00223Q2171R1S

CE	
Certification organization	ECM
Certification scope	Pressure Transmitter
Standard	EN61326-1:2013
	EN61326-2-3:2013
	EN61000-6-2:2005/AC:2005
	EN61000-6-4:2007+A1:2011
Certificate No.	3Z200408.NHET098