

HPM418 Level Transmitter



Nanjing Hangjia Electronic Technology Co., LTD.

Overview

HPM418 level transmitter features a fully sealed submersible design and utilizes a corrosion-resistant, wear-resistant, and high-precision ceramic capacitive pressure sensor. The probe, immersed in the measured medium, is made of 316L stainless steel or titanium alloy, and the gas-conducting cable is made of fluoroplastic or polyurethane. It is primarily used for measuring liquid levels in wastewater, seawater, and other demanding applications.

The product's casing employs a fully welded process, and multiple layers of design ensure reliable sealing at all connections, including the casing and wiring. Internal potting further guarantees a long service life. It is widely used in chemical, water treatment, environmental protection, pharmaceutical, and industrial process control applications.

Features

- ◆ High-purity ceramic (99.9% Al₂O₃) capacitive sensor
- ◆ 22mm diameter, suitable for 1-inch tube installation
- ◆ Flush membrane structure, anti-clogging
- ◆ Corrosion resistant, wear resistant
- ◆ Laser welding process
- ◆ Encapsulation process, containing polymer sieve, anti-condensation
- ◆ Multiple protection and sealing structure design

Applications

- ◆ Urban sewage and industrial wastewater
- ◆ Viscous media
- ◆ Chemical industry
- ◆ Water treatment industry
- ◆ Environmental Protection Industry
- ◆ Industrial process control

Technical Parameters

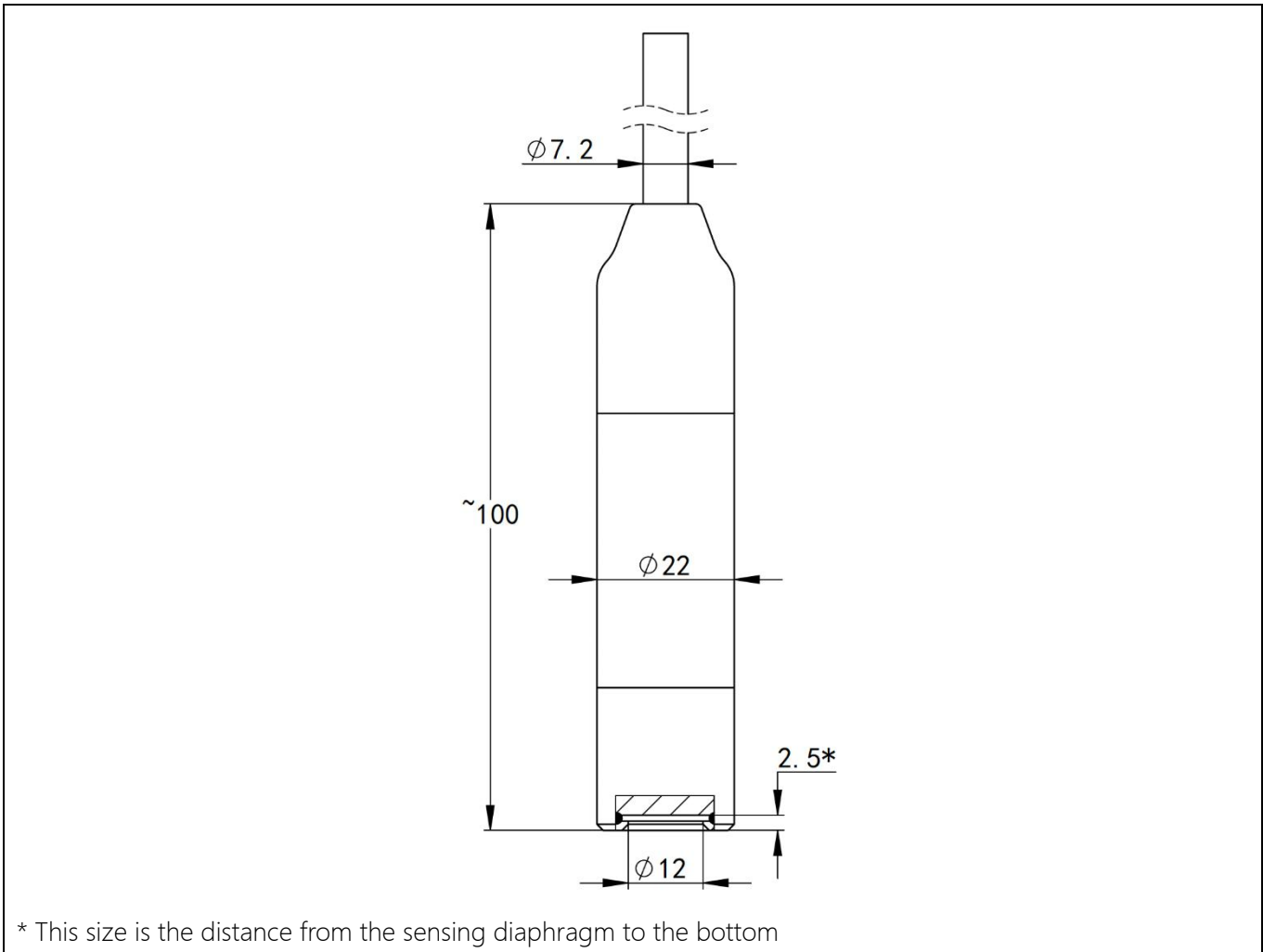
Measuring range	0~0.5...200mH ₂ O*
Overload	2~40 times full scale**
*Measurement units can be converted to ftH ₂ O@4°C, inH ₂ O@4°C, m, mm, etc.	
**Depending on the measurement range, please consult a sales engineer for details.	
Measuring Medium	Various liquids compatible with contact materials
Output Signal/Power Supply (1)	2-wire 4~20mA _{DC} / V _S =10~30 V _{DC}
Output Signal/Power Supply (2)	2-wire 4~20mA _{DC} +HART / V _S =12~32 V _{DC}
Output Signal/Power Supply (3)	3-wire 0~5V _{DC} etc. /V _S =10~30 V _{DC}
Output Signal/Power Supply (4)	4-wire Modbus-RTU/RS485 /V _S =3~8 V _{DC} or 10~30 V _{DC}
Accuracy	±0.25%FS (typical) *Accuracy complies with IEC 60770 (non-linearity, hysteresis, repeatability)

Load characteristics	4~20mA _{DC} 2-wire: $R_L \leq (U-10) / 0.02\Omega$ 4~20mA _{DC} +HART 2-wire: $R_L \leq (U-12) / 0.02\Omega$ Voltage output, 3-wire: $R_L > 10k\Omega$
Long-term Stability	±0.2%FS/year
Compensation Temperature Range	-20~80°C
Temperature Coefficient of Zero	±1.0%FS (within compensation temperature range)
Temperature Coefficient of Full Scale	±0.8%FS (within compensation temperature range)
Operation Temperature	-20~80°C
Medium Temperature	-20~80°C
Storage Temperature	-20~80°C
Protection Grade	IP68
Short circuit protection	With
Reverse polarity protection	No damage, circuit does not work
Insulation resistance	>100MΩ, 500VDC
Dielectric strength	Apply 500VAC 50Hz test voltage, no breakdown or arcing for 1 minute.

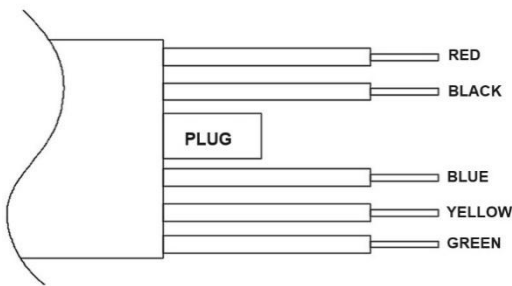
Structure Material

Code	Part	Note
S6	Probe shell	SS316L
TI		Titanium alloy
M6	Pressure sensor	Ceramic, Al ₂ O ₃ 99.9%
FK	O-ring	Fluorine rubber FKM (working temperature: -20~200°C)
FF		Perfluoro rubber FFKM (More corrosion resistant, working temperature: -25~300°C)
C2U	Cable	PU polyurethane cable, external diameter (7.2±0.2) mm
C2F		PTFE cable, external diameter (7.2±0.2) mm

Structure Drawings (Unit: mm)



Electrical Connection



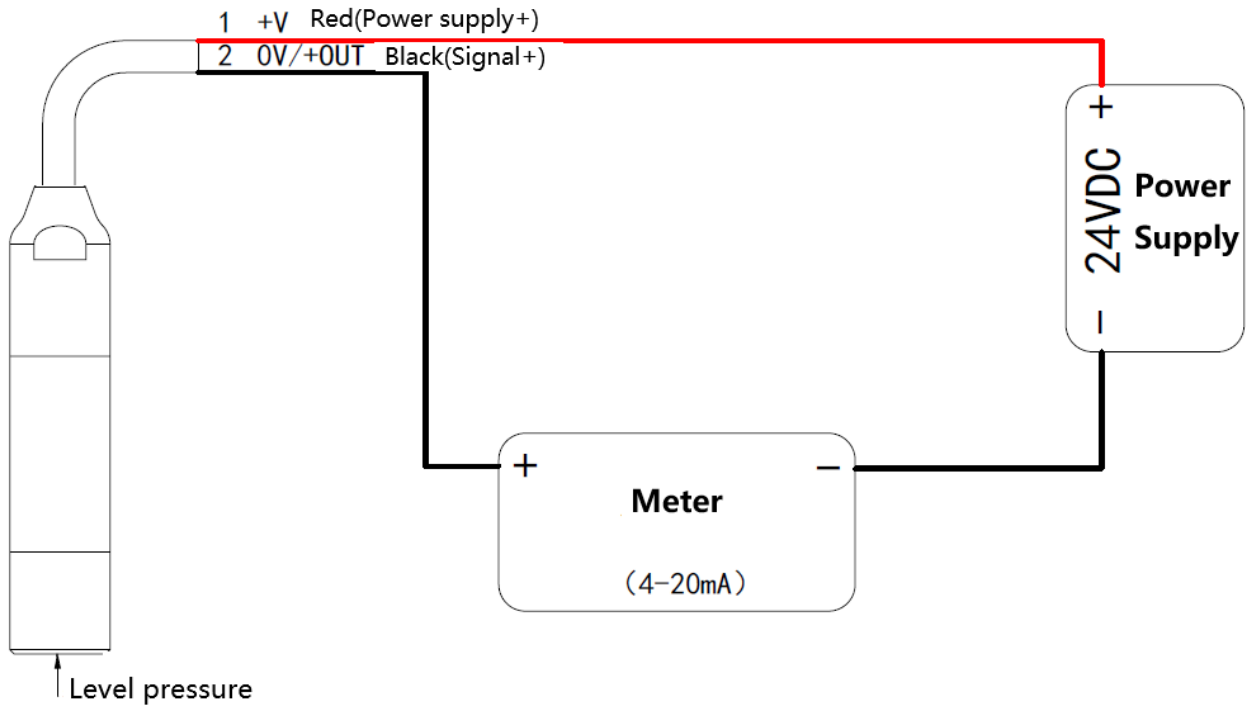
Wire color	4~20mA 2-wire	Voltage 3-wire	Modbus-RTU/RS485
Red	Power supply+ (+V)	Power supply+ (+V)	Power supply+ (+V)
Black	Power supply- (0V/+OUT)	Common (GND)	Power supply- (-V)
Blue	-	Output+ (+OUT)	-
Yellow	-	-	RS485A
Green	-	-	RS485B



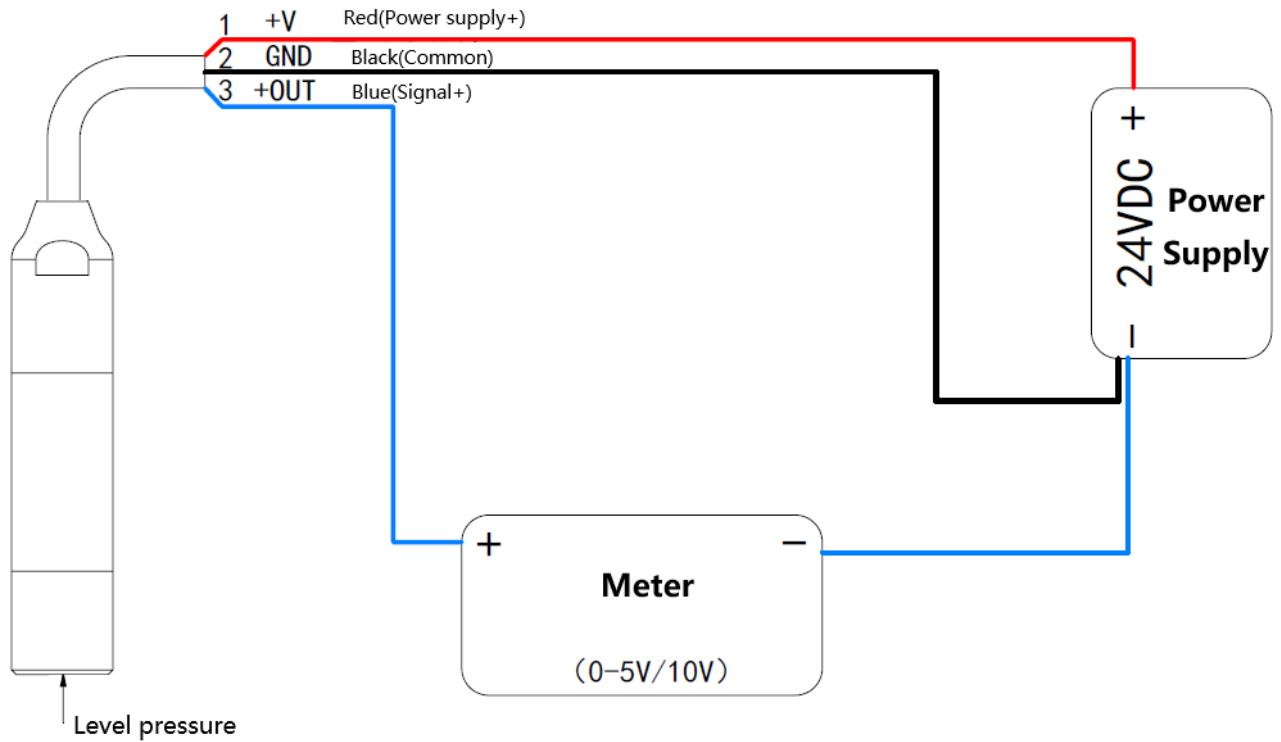
Gauge pressure products should refer to the current atmospheric pressure, and the breathable plug must be kept dry and prevented from falling off.

Electrical Wiring Diagram

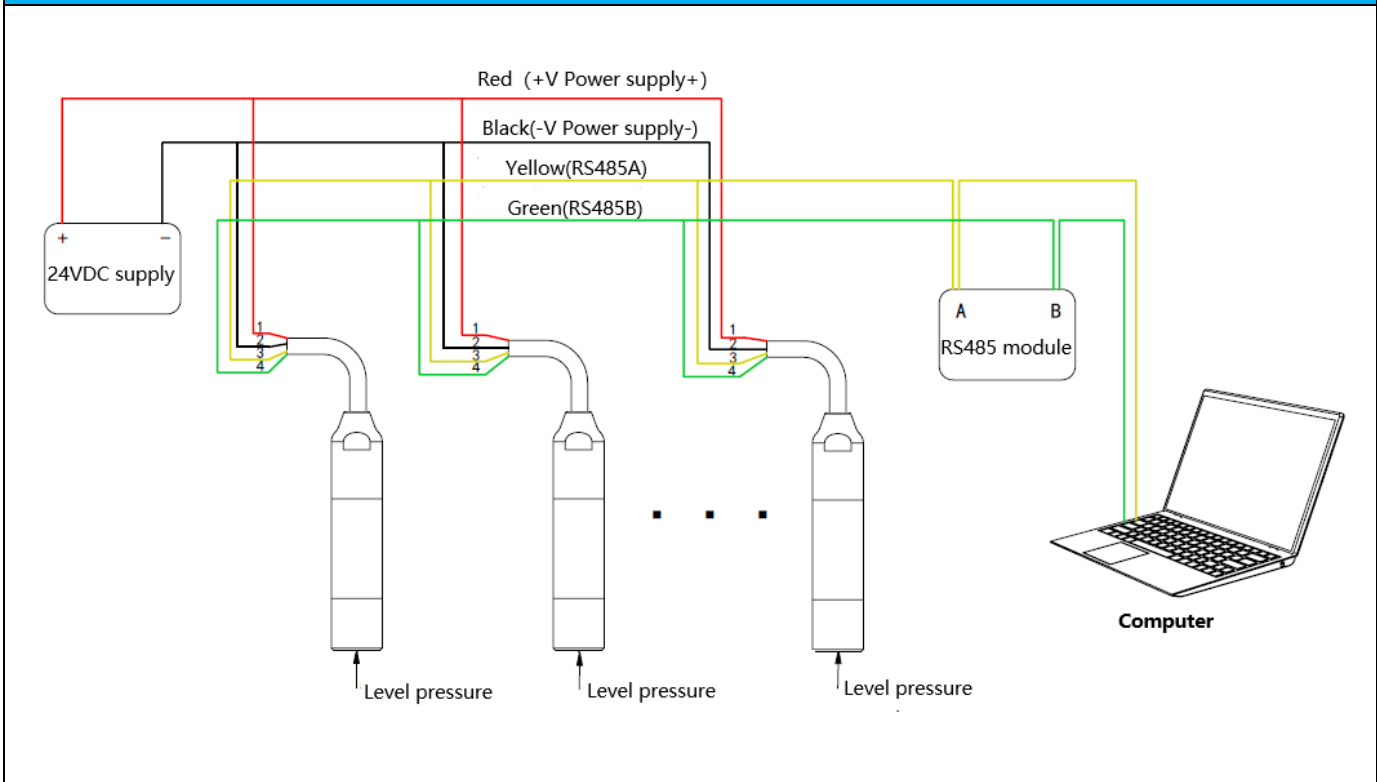
2-wire 4-20mA DC output



3-wire voltage output

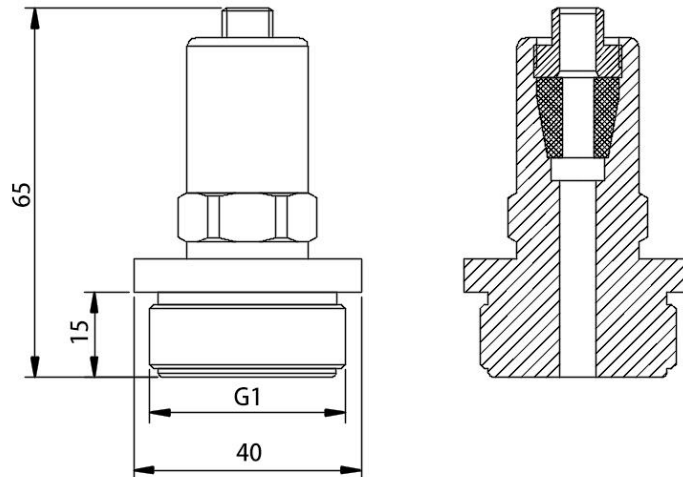


Modbus-RTU/RS485 output



Mounting (Unit: mm)

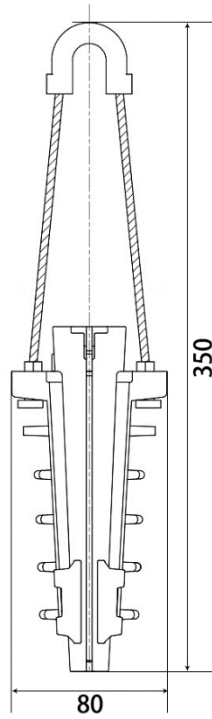
Threaded Mounting Parts (Ordering Code W1)



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

Weight ~450g

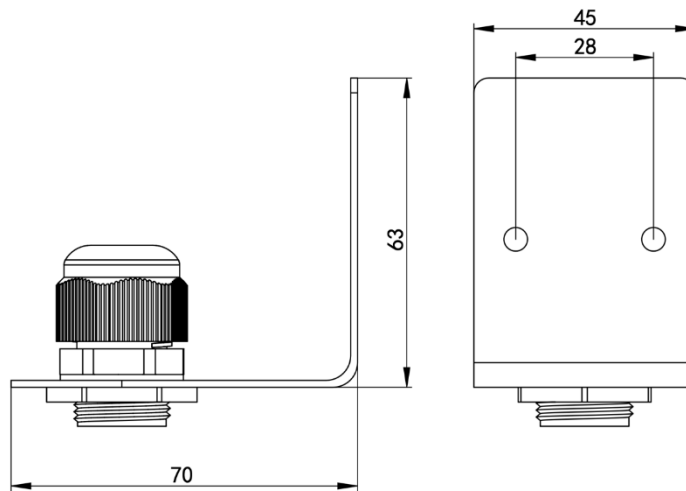
Cable clip (Ordering code W8)



Used to fix the entire product at the top

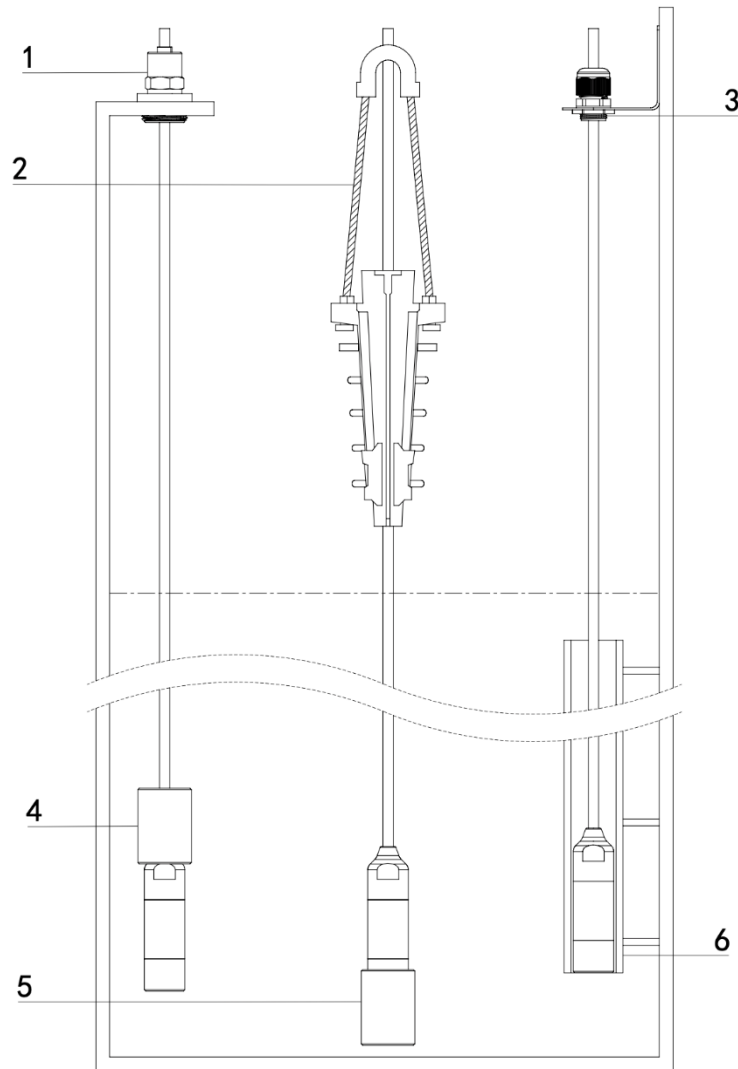
Weight ~340g

Right Angle Mounting Bracket Kit (Ordering code W4) Dimensions



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

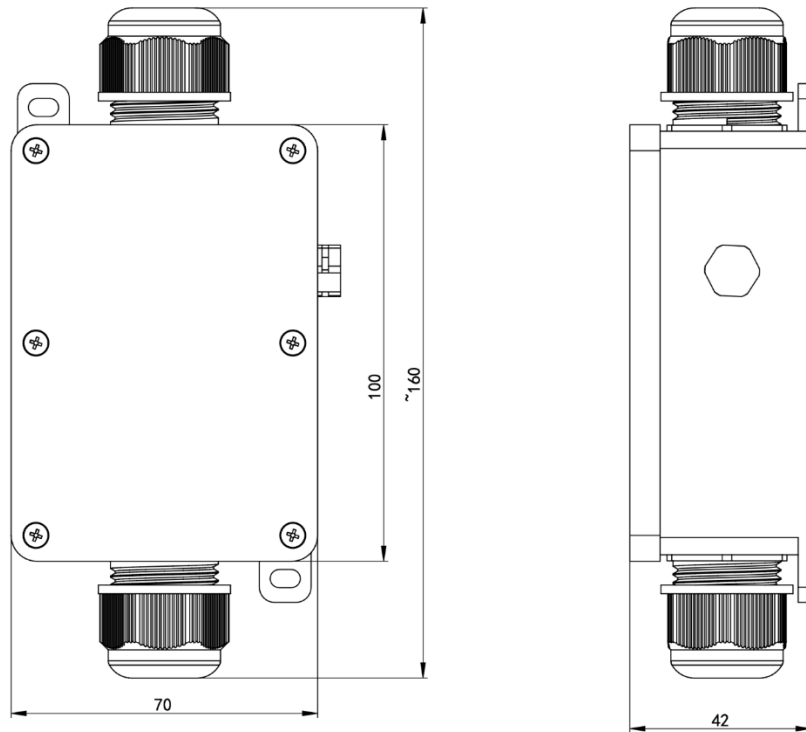
Weight ~75g

Installation diagram

1. Threaded mounting parts (W1)
2. Cable clip (W8)
3. Right-angle mounting bracket kit (W4)
4. Top connecting counterweight (W2)
5. Bottom connecting counterweight (Not available for this model)
6. Protective tube

Accessories (unit: mm)

Waterproof and breathable junction box (Ordering code W9)



Weight ~150g

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.

Ordering Guide

Item No.	Type							
HPM418	Submersible level Transmitter							
eg:HPM418	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						
	B4	(0 - 5)V						
	B7	Modbus-RTU/RS485						
	B8	(4 - 20)mA+ HART						
	Code	Cable Material						
	C2F	PTFE						
	C2U	PU						
	Code	Mounting method						
	N	No						
	W1	Threaded mounting parts						
	W2	Top weight						
	W4	Right Angle Mounting Bracket Kit						
	W8	Clip						
	Code	Pressure sensor						
	M6	Ceramic capacitor						
	Code	Probe shell material						
	S6	316L						
TI	Titanium alloy							
Code	Sealing ring material							
FK	FKM							
FF	FFKM							
Code	Additional Functions							
QF	Factory report							
W9	Waterproof and breathable junction box							
	Other requests							
eg:HPM418	[0 - 3]mH ₂ O (4)	B1	C2F	N	M6	S6	FK	QF

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	2014/30/EU
Certificate No.	6G241223.NHEWC83