HPM4100 Submersible Level Transmitter

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Overview

The HPM4100 Submersible Level Transmitter adopts a fully sealed submersible structure. This type of transmitter consists of a pressure sensor that has undergone long-term stability and reliability tests, and a high-precision dedicated signal conditioning circuit, all enclosed in a stainless steel housing. The integrated structure and standardized signal facilitate on-site use and automatic control. The dedicated cable is hermetically connected to the housing, allowing long-term submersion in liquids compatible with the transmitter's structural materials. The product's housing adopts a full welding process, and reliable sealing with multiple designs is applied to the connections of the housing, cable and other components. The internal potting process ensures a long service life of the product.

The HPM4100 Submersible Level Transmitter features small size, easy use, and good long-term stability. It is suitable for water level or liquid level measurement and control in fields such as water level measurement of rivers and lakes, liquid level measurement of containers and storage systems, liquid level monitoring of fire-fighting pools and water tanks, liquid level monitoring of rainwater and sewage lift pumps and pumping stations, manhole water level monitoring, urban water supply and drainage, and hydrological exploration.

Features

- Integrated submersible structure, simple and convenient
- Multiple protection and sealed structure design, IP68 rating
- Dual anti-condensation process
- Full welding process
- Wide measurement range, from 1m to 500m
- Digital compensation for wide temperature range, good stability

Applications

- Rivers and Lakes
- Water Pools and Tanks
- Groundwater, Water Level Monitoring, Urban Water Supply and Drainage, etc.
- Water Treatment Industry
- Marine Use

Technical Parameters

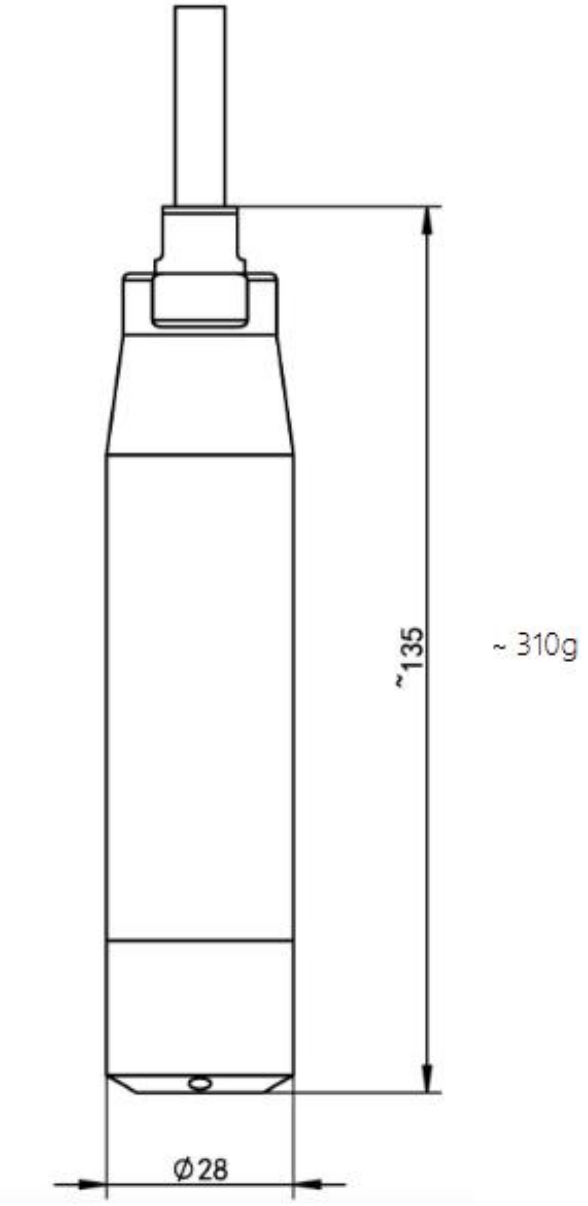
Pressure Range	0 ~ 1…500mH_2O 0 ~ 10kPa…5MPa Note: Measurement units can be converted to ftH_2O@4℃, inH_2O@4℃, m, mm, etc.; when m, mm, etc. are used as units, the density value of the measured medium shall be provided
Overload	1.5 times full scale

Measuring Medium	various liquids compatible with contact material
Output Signal/Power Supply(option1)	Two-wire System: 4~20mA / Vs=9~30V
Output Signal/Power Supply(option2)	Three-wire System: 0 ~ 5V / Vs=9~30V
Output Signal/Power Supply(option3)	Three-wire System: 0 ~ 10V / Vs=12~30V
Output Signal/Power Supply(option4)	Four-wire System: Modbus-RTU/RS485 / Vs=10~30V
Accuracy	±0.5%FS @25℃
Long-term Stability	±0.25%FS/Year
*Accuracy complies with IEC 60770 (non-linearity, hysteresis, repeatability)	
Compensation Temperature Range	0 ~ 60℃ (Range ≤70kPa) -10 ~ 70℃ (Range >70kPa) Note: For range ≤20kPa, please inquire.
Zero Point Temperature Drift	±1.5%FS Referenced to 25℃, within temperature compensation range
Full-scale Temperature Drift	±1.5%FS Referenced to 25℃, within temperature compensation range
Operating Ambient Temperature	-40～80℃
Measured Medium Temperature	-40～80℃
Storage Temperature	-40～85℃
Protection Grade	IP68(for probe)
Electrical Protection	Reverse Polarity Protection.No damage, circuit inoperative
EMC	Conforms to EN 61326
Insulation resistance	>20MΩ，500VDC
Dielectric strength	<2mA 500VDC (Apply 500VAC 50Hz test voltage, no breakdown or arcing for 1 minute)

Structure Material

Code	Part	Note
S4	Probe Housing Material	304
S6		316L
M1	Pressure sensor	Silicon Piezoresistive，316L
C2U	Cable	NBR Nitrile Cable, Outer Diameter (7.2±0.2)mm
C2N		PU Polyurethane Cable, Outer Diameter (7.2±0.2)mm

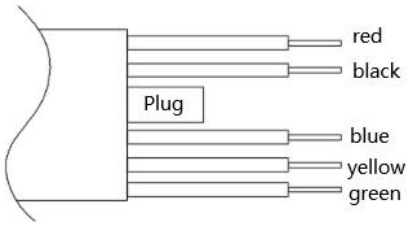
Structure Drawings (Unit: mm)



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

Weight:~310g

Electrical Interface

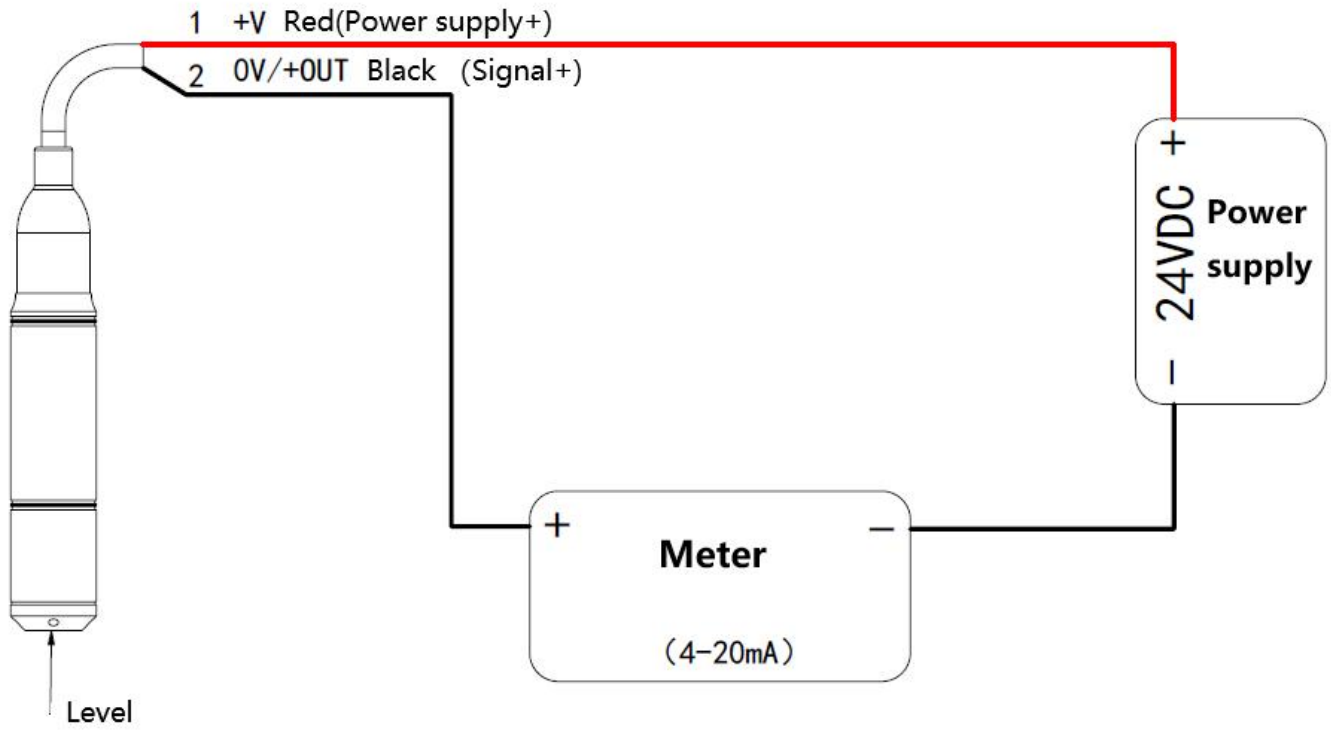


Wire color	2-wire 4 ~ 20mA	3-wire voltage	Modbus-RTU/RS485
Red	Power supply+ (+V)	Power supply+ (+V)	Power supply+ (+V)
Black	Power supply- (0V/+OUT)	Common (GND)	Power supply- (0V)
Blue		Output+(+OUT)	
Yellow			RS485A
Green			RS485B

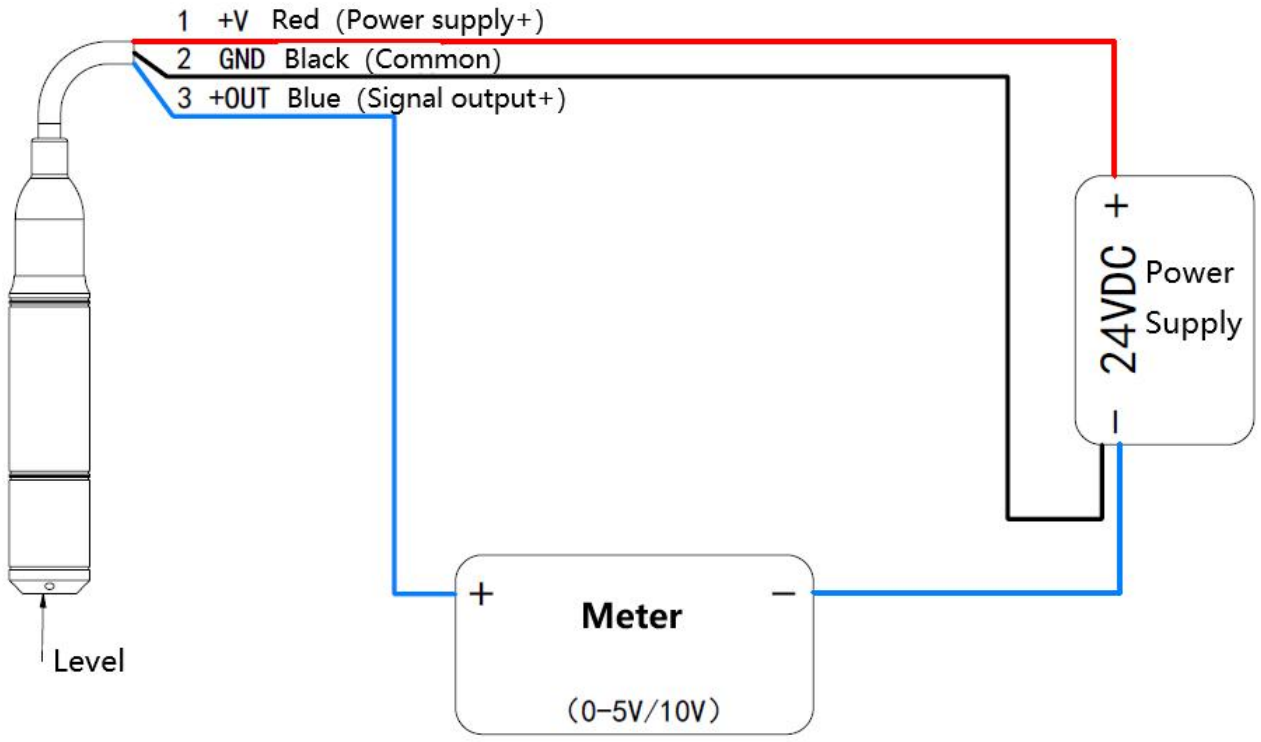
⚠ Gauge pressure products should be referenced to current atmospheric pressure, and the breathable plugs should be kept dry and prevented from falling out.

Electrical Connection

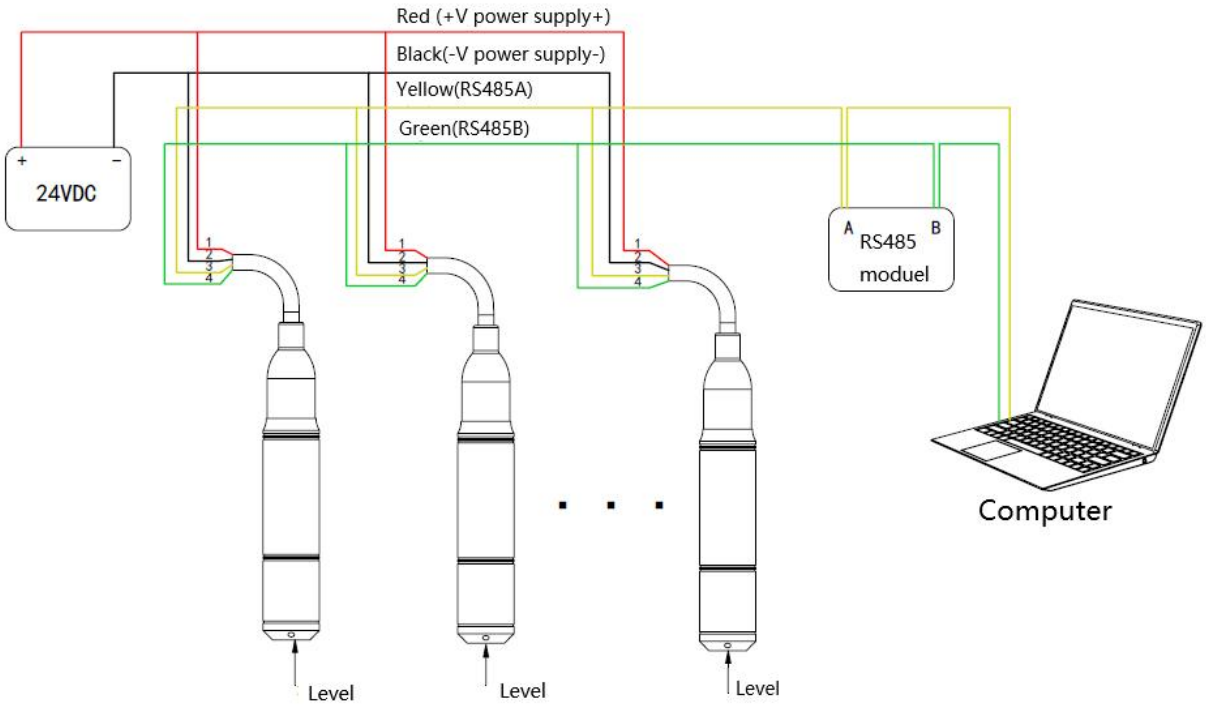
Two-wire System Current Output



Three-wire System Voltage Output

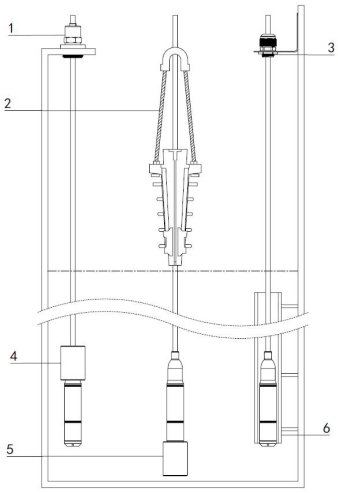


Modbus-RTU/RS485 output



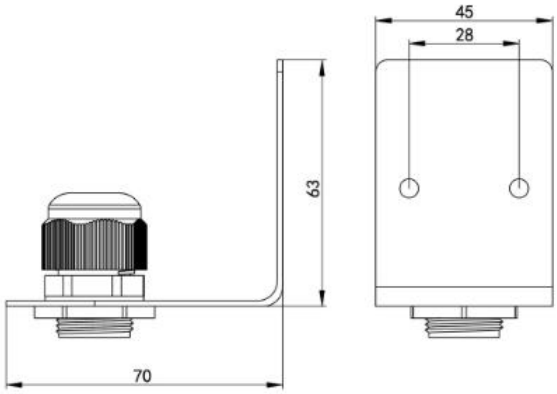
Installation (Unit: mm)

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

Dimensional Drawing of Right-angle Mounting Bracket Kit (W4)

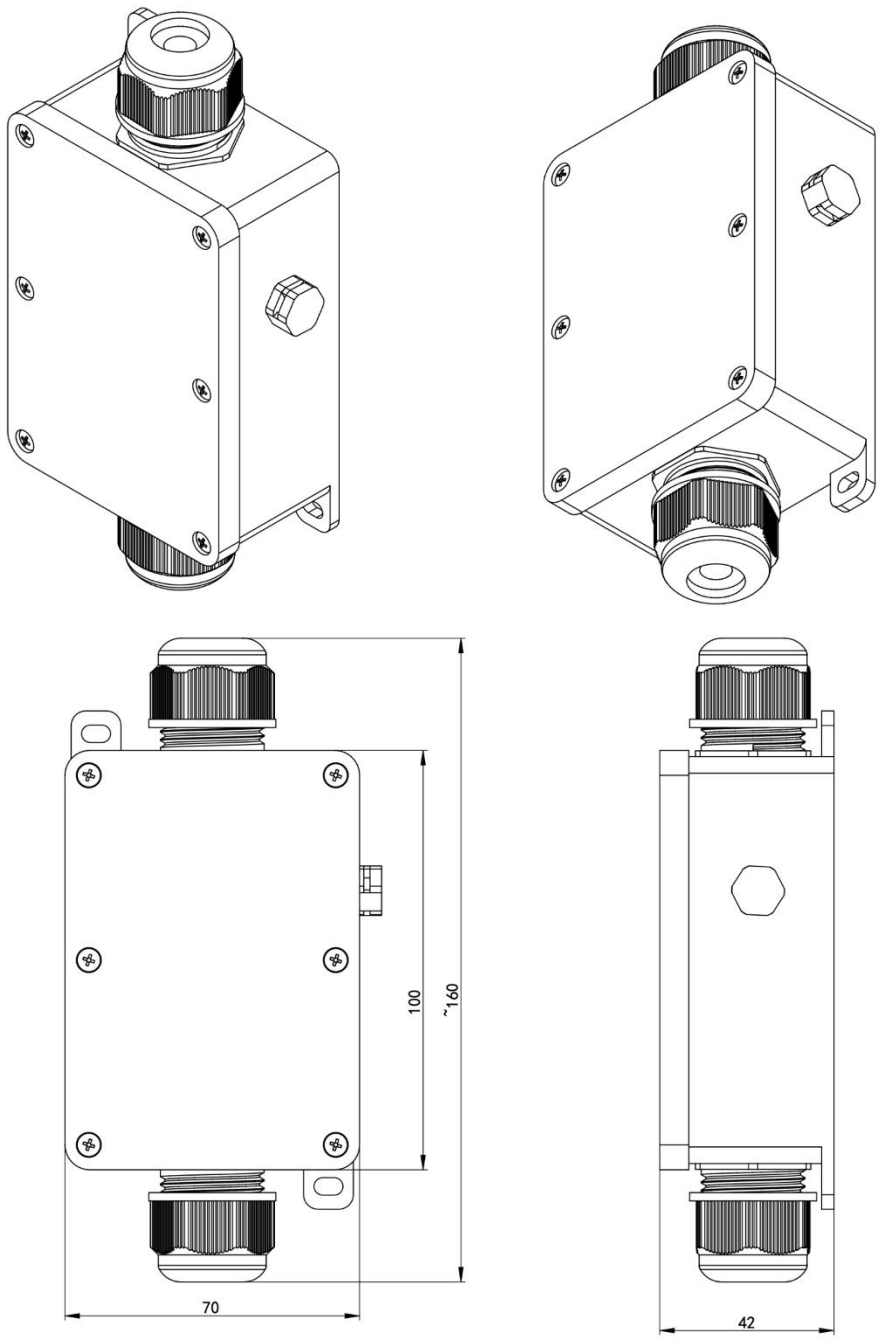


Used for fixing and supporting the entire product at the top

Weight ~75g

Accessories (Unit: mm)

Waterproof and Breathable Junction Box (W9)



1. Junction Box IP68 Protection Level

2. Used to extend the air guide cable and ensure the product's waterproof and breathable function

Ordering Guide

Model No.	Type					
HPM4100	Submersible Liquid Level Transmitter					
	Range	Measuring Range				
	[0~X]mH$_2$O (Ln)	X is the measuring range; Ln is the cable length				
		Code	Output signal			
		B1	(4 - 20)mA			
		B3	(0 - 10)V			
		B4	(0 - 5)V			
		B6	(0.5 - 4.5)V			
		B7	RS485			
			Code	Cable material		
			C2N	NBR Nitrile		
			C2U	PU Polyurethane		
				Code	Fixing Method	
				N	None	
				W1	Threaded Mounting Component	
				W4	Right-Angle Mounting Bracket Kit	
				W8	Cable Clip	
					Code	Sensor
					M1	316L, Silicon Piezoresistive
						Code / Probe Material
						S4 / 304
						S6 / 316L
Example: HPM4100 (0 - 50)℃	[0~3]mH2O (L5)	B1	C2N	N	M1	S4