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AI-LF Submersible level transmitter general instruction Manual



Product Overview

The AI-LF intelligent submersible level transmitter is a new generation of intelligent product that uses a high-performance diffused silicon pressure sensor as its measuring element. It features precise correction and compensation for the sensor's inherent pressure and temperature characteristics, and transmits level signals via an RS485 Modbus RTU digital interface.

This level transmitter is designed and developed in accordance with national standards and specifications such as marine products, explosion-proof standards, GJB150, GB/T2423, and JJG860. It is also manufactured and inspected according to the ISO9001:2015 quality management system requirements and company standards. This product has undergone long-term verification, demonstrating stable and reliable data operation. It is suitable for harsh environments with strong interference and possesses the ability to resist strong electromagnetic signal interference.

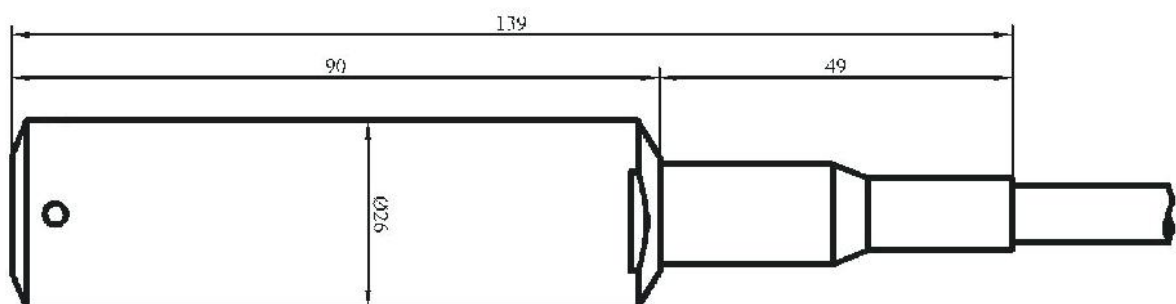
Features

- ✓ Designed entirely of 316L stainless steel, with an IP68 protection rating.
- ✓ The probe has functions such as preventing sedimentation, preventing injury from sharp objects, and preventing the growth of marine organisms.
- ✓ RS485 digital output.
- ✓ Precision correction and compensation across the entire temperature range, with a maximum design accuracy of 0.1%FS.
- ✓ Meets EMC environmental requirements.

Application areas

- ✓ Shipping, water conservancy and hydrology, water tank level measurement.
- ✓ Marine monitoring, river and groundwater level monitoring.
- ✓ Urban water supply and urban road sewage monitoring.
- ✓ Liquid depth monitoring in industries such as petrochemicals and power.

External structure: (unit: mm)





Technical parameters:

Pressure parameters		
Range	0 mH2O ~ 1 mH2O...200 mH2O	
Overload	2 times full-scale pressure, 5 times overpressure for 5 mH2O and below.	
Electrical parameters		
Power supply	10V~28V DC	
Output signal	RS485 Modbus protocol output	
Load capacity	Up to 99 transmitters can be connected via the RS485 bus.	
Insulation resistance	100MΩ , 50V DC	
Structural parameters		
Enclosure	Stainless steel	
Sensor	316L stainless steel	
Sealing ring	Fluororubber	
Cable	∅ 7.5mm polyethylene special cable	
Protection level	IP68	
Environmental conditions		
Media suitability	Various fluids that do not corrode 316L stainless steel and fluororubber	
Compensation temperature	-10℃ ~ 80℃	
Operating temperature	-20℃ ~ 85℃	
Storage temperature	-40℃ ~ 125℃	
Performance indicators		
Accuracy	±0.1%FS (Minimum)	±0.5%FS (Maximum)
Zero-point temperature coefficient	±0.05%FS/℃ (≤5 mH2O)	±0.02%FS/℃ (>5 mH2O)
Full-scale temperature coefficient	±0.05%FS/℃ (≤5 mH2O)	±0.05%FS/℃ (>5 mH2O)
Long-term stability	±0.3%FS/year (Maximum)	

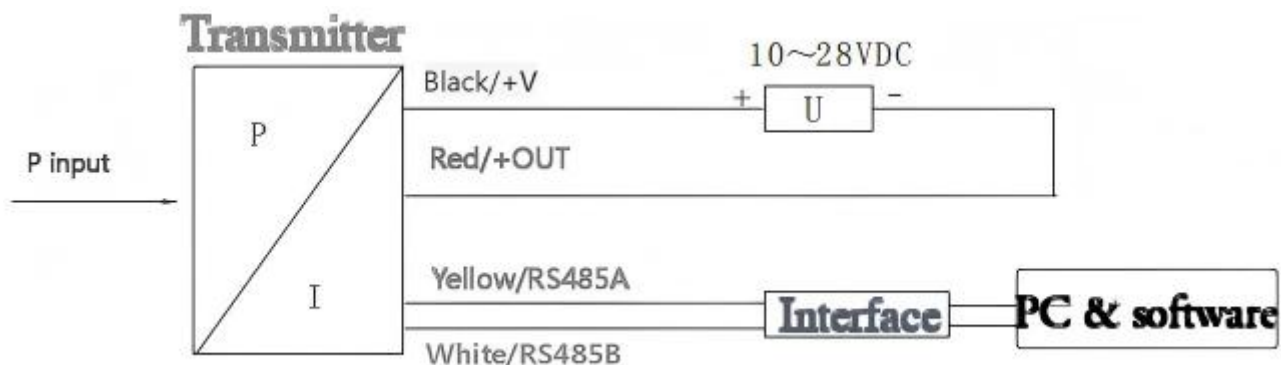


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Electrical connection

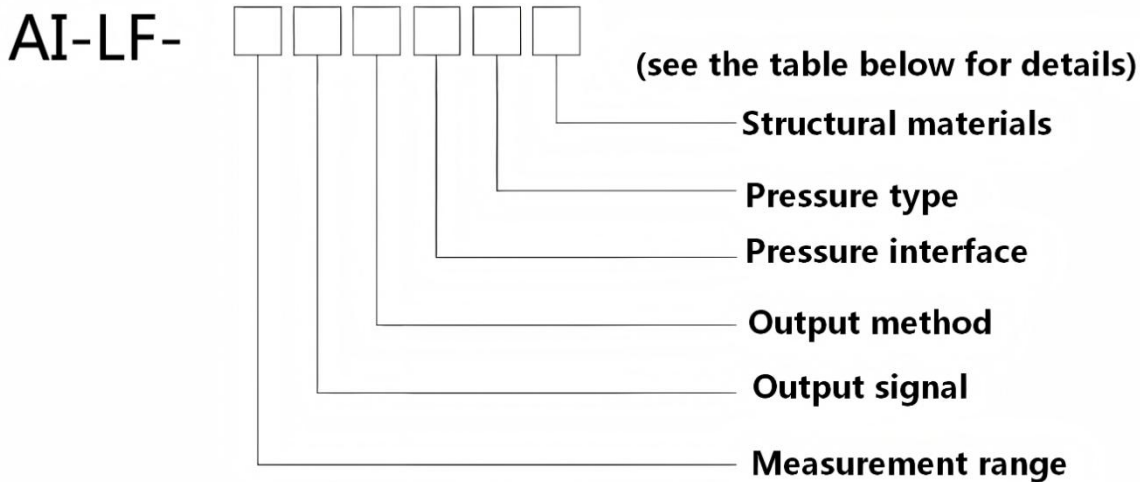


The electrical connection method for RS485 communication is shown in the figure below.

Electrical definition	Cable type
Power positive	black
Power supply negative	red
RS485A	yellow
RS485B	White



Selection Guide



			material	function
AI-LF	[0 ~ 5mH2O]L	R4	22	Y

Illustrate:

Item number: AI-LF- [0 ~ 5mH2O] L-R4 – E – 22-Y

Product model: AI-LF Submersible intelligent liquid level transmitter; **Range ability:** [0 ~ 5mH2O]L;

Output signal: RS485 protocol output;

Structural material : Isolation diaphragm : Stainless steel 316L , interface : Stainless steel, shell: Stainless steel;

Additional function: Junction box

Range ability	Measurement rang: 0 mH2O ~ 1 mH2O...200 mH2O [0-X mH2O] L; X: Measure the liquid level, L: Length of the cable. Suggestions for selection L-X= (1 ~ 2) m	
Output signal	R4	RS485 agreement output
Structural material	22	Isolation diaphragm: Stainless steel 316L Interface: Stainless steel Shell: Stainless steel
	24	Isolation diaphragm: Stainless steel 316L Interface: Stainless steel 316L Shell: Stainless steel 316L
Additional function	Y	Junction box



Selection tips:

1: If you need to measure oil or other special liquids, please specify in advance so that we can provide the most reliable products.

2: Although the product is designed with various protective measures, for extreme applications, such as applications with strong lightning strikes, it is necessary to ensure that the power supply is reliably grounded and to install lightning protection devices to minimize the probability of product failure.

3: For products with special applications, our company can provide special design and manufacturing services. Please feel free to contact us.

After-sales service



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