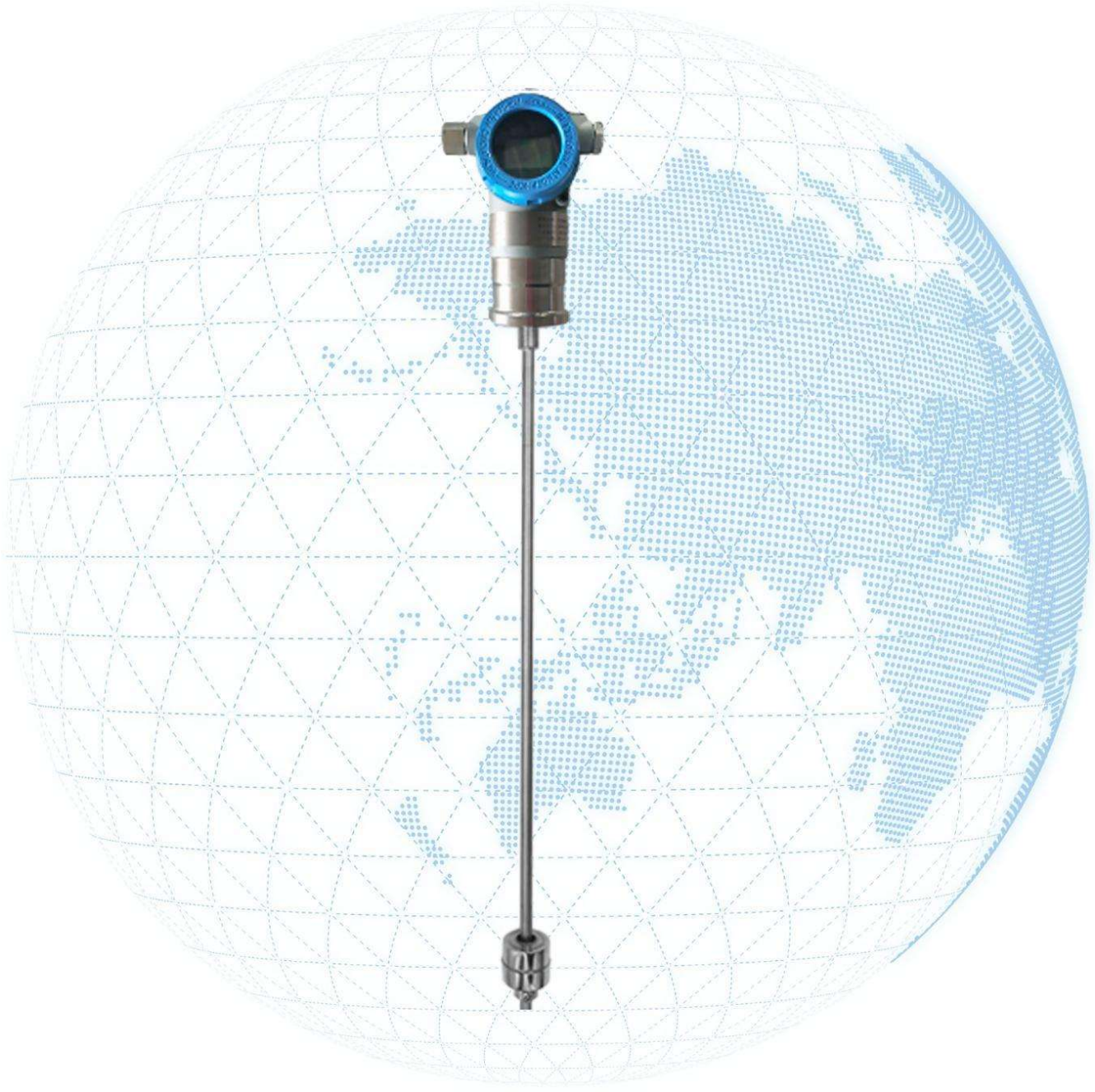
Product Manual

Magnetostrictive Liquid Level Gauge



Working principle

The UHF-C magnetostrictive level gauge is developed according to the principle of magnetostriction, and it is a new generation of high-precision measurement level gauge.

When the magnetostrictive level gauge is working, the transmitter circuit outputs an excitation pulse current, and the pulse current propagates along the magnetostrictive line and generates a pulse current magnetic field.

The sensor rod of the magnetostrictive liquid level gauge is equipped with a magnetic float, and the float moves along the rod with the change of the liquid level.

A permanent magnetic ring is installed inside the float. When the pulse current magnetic field meets the magnetic ring magnetic field of the float, the magnetic field around the float changes so that the magnetostrictive wire generates a torsional wave pulse at the position where the float stays. This pulse is at a fixed speed. It is transmitted back to the transmitter along the magnetostrictive line and detected by the detection circuit.

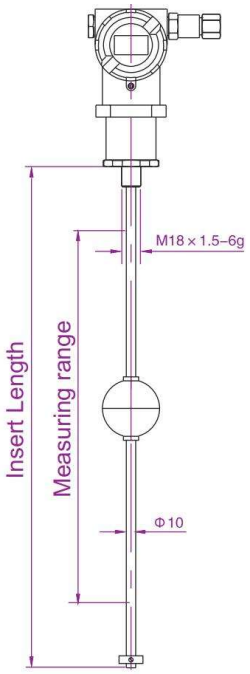
The central processor calculates the time difference between the pulse current and the torsion wave pulse to accurately determine the position of the float, that is, the position of the liquid surface.

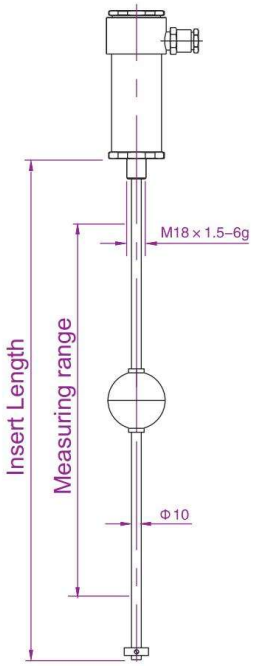
Transmitter analog-to-electric conversion circuit outputs 4-20mA signal or RS485 MODBUS signal, so as to realize the purpose of remote transmission of liquid level signal.

Technical advantages

- High accuracy, high repetitive measurement, stable and reliable performance
- Multiple signals are optional,
- The zero point and full degree are 100% in the measurement range
- Anti-RF interference and lightning protection design
- It does not require regular calibration and maintenance
- The installation method is flexible and easy
- It has strong pollution resistance and is suitable for harsh industrial environment
- Rigid rod structure.The pressure bearing performance is good
- Flexible construction.Solve the problem of super-long-range measurement, convenient transportation and installation
- Corrosion structure in strong corrosion environment

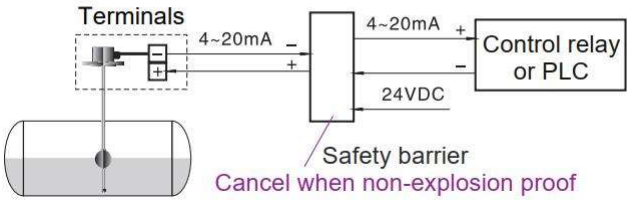
Appearance structure



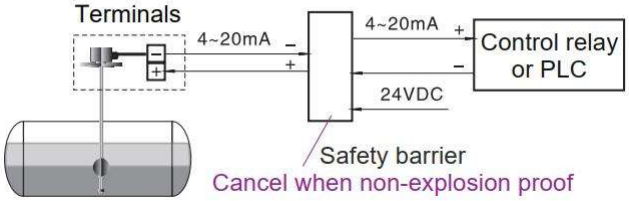


Wiring connection

For liquid level measurement



For interface level measurement



Main technical parameters

Measurement range:	Rigid structure: 50~5000mm Flexible structure: 4000~20000mm(Others for customization)
Repeatability error:	±0.01%F.S
Non-linxer error:	±0.05%F.S(when below300mm, ≤150μm)
Resolution:	1mm, 5μm(high accuracy type)
Delay:	<± 0.01% F.S.
Temperature influence:	<±0.007%/F.S/℃
Zero-point / Range adjustable range:	100%F.S.
Wetted material:	SS304. SS316L. SS304 + PTFE
Electronic warehouse shell material:	SS304. Aluminum alloy (with field reality, HART)
Process connection form:	Thread, flange
Operating temperature:	-40-85℃
Storage temperature:	-40~100℃
Nominal pressure:	PN2.5~PN160 (*O.1MPa) (specially accessible PN250)
Output signal:	4~20mADC ModBus.0-10VDC.0-5VDC, etc.
Working power supply:	24VDC
Load resistance:	≤500Ω
Electrical interface:	M20*1.5,1/2"NPT, straight out cable, aviation plug, terminal
Medium density:	≥0.5g/cm3（<0.5g/cm3 for pecial order)
float diameter:	φ24~φ120 (manufacturer determined by pressure and density)
Protection grade:	IP65
Explosion-proof grade:	Exia Ⅱ CT6Ga, Exd Ⅱ CT6Gb

Type selection guide

UHF-C 1 2 3 4 5 / 6 7 8 9 10 11 12

1. Installation					
M1	M2	M3	T	F	X
M18*1.5	M20*1.5	M27*2	Special thread	Flange	Customization

2. Nominal pressure(*0.1MPa)								
Z	A	B	C	D	E	F	G	H
2.5	6	10	16	25	40	63	100	160

Note: At the nominal pressure ≥PN40, the flange diameter shall be ≥DN125

3. Rod material			
P1	P2	F	X
SS304	SS316L	SS304+PTFE	Customization

4. Float material			
P1	P2	F	X
SS304	SS316L	SS304+PTFE	Customization

5. Measuring rod type		
G	F	R
Rigid measuring rod 10m	304+PTFE measuring rod	Flexible measuring rod

6. Liquid density (g/cm3)
☐-Value of liquid surface
☐/☐-Value of interface level, 1st liquid/2nd liquid

7. Working temperature	
L - ≤80℃	H - ≤120℃

8. Insert depth
Directly write the length L1, unit:mm

9. Signal output		
A	B	C
4~20mA	4~20mA+HART	0~5V

10. Signal direction function	
0 (Standard)	1
Forward: Zero point near the end of the measuring rod	Forward: Zero point near the electronic warehouse

11. No. Of float	
1 - Single float	2 - Double float

12. Explosion proof		
N-Without	i-Exia	e-Exd

Note:

1. Change the structure form of the float according to the working pressure and medium density;
2. Installation flange can be produced according to user standards;
3. Rated pressure: ≤0.6MPa (> 0.6MPa supply through negotiation);
4. Other materials or special requirements can be ordered through negotiation.

Instrava
INDUSTRIAL MEASUREMENT
& CONTROL INSTRUMENTS

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Manufacturer 1 : Zigong City, Sichuan Province, China

Manufacturer 2 : Chengdu City, Sichuan Province, China