

MLT MAGNETOSTRICTIVE LEVEL TRANSMITTER

Summary

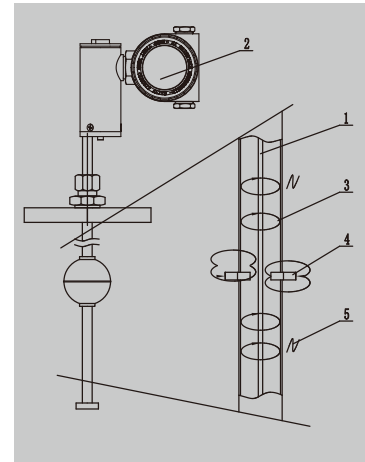
MLT Magnetostrictive level transmitter is mainly designed and developed based on the principle of magnetostriction. It is a modern high-precision liquid level measuring instrument that integrates advantages of high measurement accuracy, fast response, good reliability, long life, and exquisite structure.

MLT Magnetostrictive level transmitter will transform liquid level into 4~20mA two wire standard signal output, with HART communication protocol, which can meet various industrial field requirements. The products are widely used in petroleum, chemical, metallurgical, food and other fields.



Working Principle

The core of MLT type magnetostrictive level transmitter is the sensor, and the core of the sensor, the magnetostrictive wire, is made of rare earth super magnetostrictive material, which is known as "black earth gold" in the modern industry. It has the advantages of high strain value and strong electric (magnetic) mechanical wave conversion ability, which can transform small magnetic field vector changes into mechanical waves. The working principle is: there is a tensioned magnetostrictive wire (1) inside the sensing tube, and the sensor circuit emits current pulses (2) along the magnetostrictive wire, thereby forming a circular magnetic field around the magnetostrictive wire (3). There is a set of permanent magnets (4) inside the float, whose magnetic field makes the magnetostrictive wire magnetize in the axial direction. When the two magnetic fields are superimposed, a torsional pulse (5) will be generated at the position of the float. The pulse is transmitted to both ends along the magnetostrictive line, one end is transmitted to the top of the sensor tube, received by the sensor circuit, and the other end is transmitted to the bottom of the sensing tube. The time difference between the start pulse and the return pulse is measured to determine the float position.



Main Technical Data

- **Power supply:** 24V DC
- **Output:** 4~20mA+HART
- **Measuring range:** 200~6000mm
- **Probe diameter:** Φ12mm/Φ16mm (Choose according to measuring range)
- **Pressure rating:** ≤11.0MPa
- **Medium temperature:** -40℃~+300℃
- **Ambient temperature:** -40℃~+70℃/+80℃
- **Accuracy:** ±2mm
- **Resolution:** 1mm
- **Min. density:** 0.45g/cm³
- **Min. density difference:** 0.1g/cm³
- **Wetted material:** 316L or as customer requirement
- **Process interface:** Threaded interface, standard flange (according to user requirements) or others
- **Electrical Interface:** M20×1.5 (female thread) or as customer requirement
- **Explosion-proof:** Ex ia IIC T4/T5 Ga; Ex d IIC T3...T6 Gb
- **Ingress protection:** IP66

Model Selection Table

Model	Code		Content
MLT-			Magnetostrictive level transmitter
	Probe material		
	1		316L
	2		Others
	Output type		
	s		Level measurement
	J		Interface measurement
		Process connection	
		1	Threaded top mounted ($\geq 1\frac{1}{2}''$)
		2	Flanged top mounted ($\geq DN50$)
		3	With chamber (Top mounted)
		4	With chamber (By-pass)
		5	Transmitter (For use with magnetic level gauge together)
		Explosion-proof type	
		i	Intrinsic safety
		d	Explosion-proof

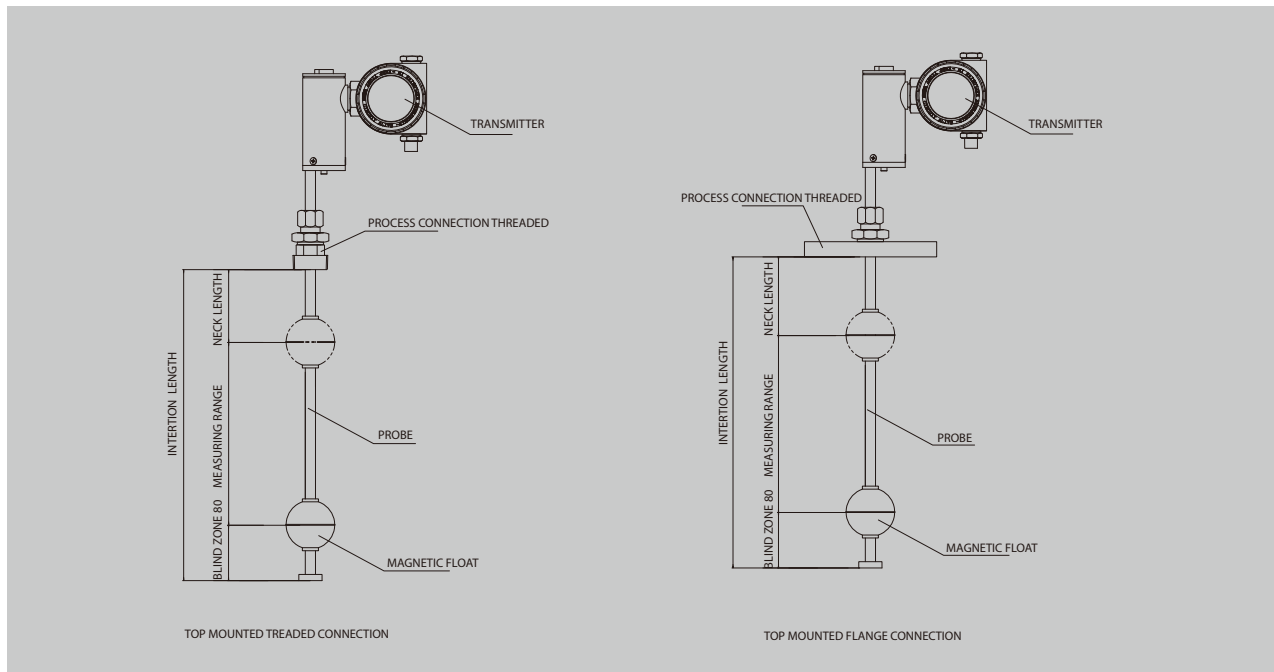
Example of Model Selection

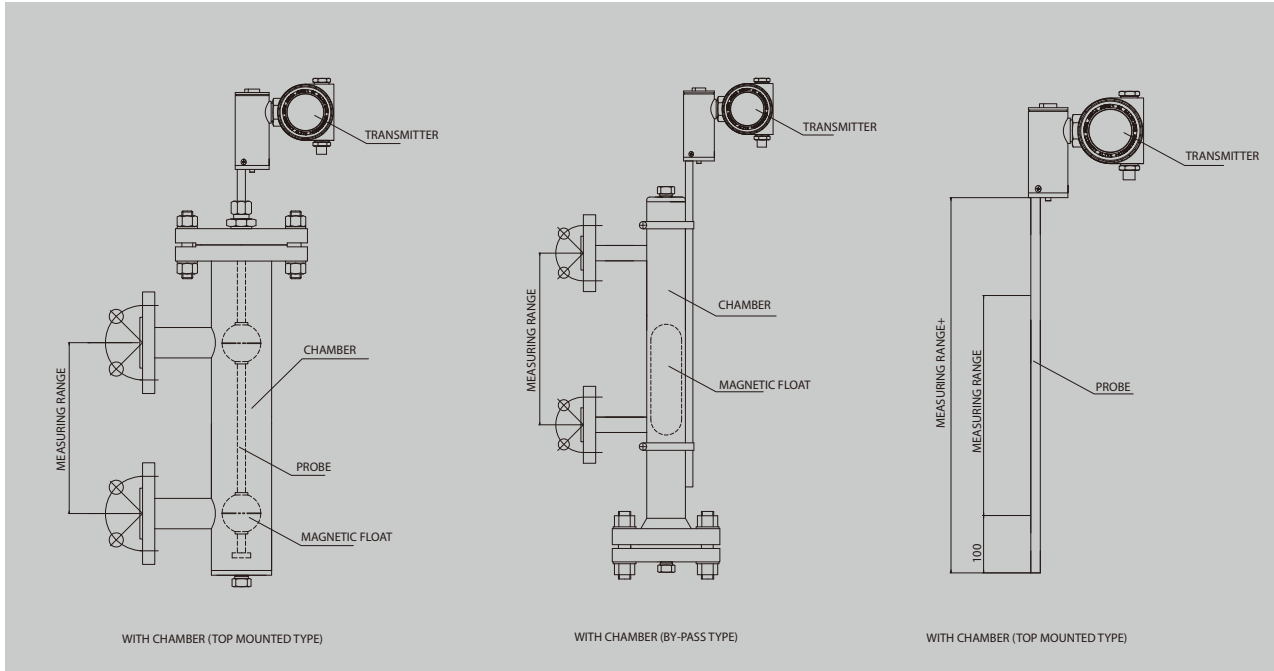
MLT-1S3d

MLT Type magnetostrictive level transmitter, probe material is 316L, level measurement, with chamber (top mounted type), explosion-proof type.

Outline Drawing and Installation

See the figures below for structure and size





Ordering Information

- ▶ Model
- ▶ Medium name and density
- ▶ Operating pressure and temperature
- ▶ Wetted material
- ▶ Measuring range
- ▶ Flange standard