

MAGNETOSTRICTIVE LEVEL TRANSMITTER

MODEL: WY8030



SINCE 1999

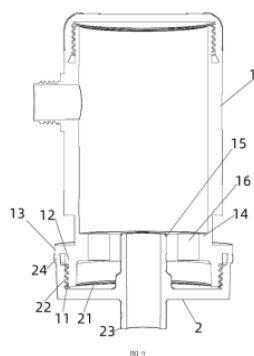
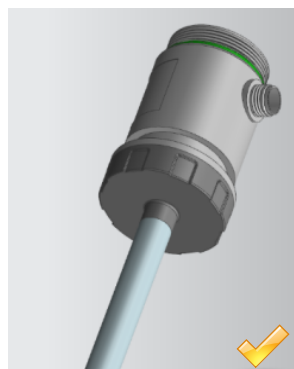
Focus on R&D/Production and Sales

1.Description

Level transmitters using a magnetostrictive, high-resolution measuring principle are designed for continuous level measurement of liquids. They operate based on determining the position of a magnetic float, following the magnetostrictive principle, and are typically mounted on the outside of a bypass level indicator.

The measurement process begins with a current impulse, which generates a circular magnetic field along a wire made of magnetostrictive material. This wire is held under tension inside the sensor tube. Positioned at the liquid level is a cylindrical float with permanent magnets, which acts as a position transducer. The float's magnetic field interacts at right angles with the impulse magnetic field.

The interaction of these two magnetic fields creates a mechanical wave in the wire. This wave is then converted into an electrical signal by a piezoceramic pick-up located at the end of the wire inside the sensor housing. By measuring the propagation delay of the wave, the position of the float— and therefore the liquid level— can be determined with high accuracy.



Patented technology IP68, The liquid contact surface is designed without gaps, and corrosive gases will not enter the internal circuit to corrode it during long-term use.

2.Features

- ◆ 1. Non-contact measurement, never wear out.
- ◆ 2. Anti-strong magnetic field interference (exclusive technology), stable and reliable performance, long service life.
- ◆ 3. Absolute output, no need for regular calibration, no need to reset to zero position when restarting.
- ◆ 4. PFA material shell, resistant to strong acid and alkali corrosion.
- ◆ 5. 0.1mm resolution, high-precision liquid level detection.
- ◆ 6. Easy to install and maintain, using standard output signals, convenient for customer system automation upgrades.
- ◆ 7. Rich communication interfaces, can be customized on demand.

3.Applications

- ◆ **1.Oil & Gas Industry:** They are used in storage tanks, pipeline monitoring, and wellhead monitoring to measure the level of crude oil, fuel, and other liquids.
- ◆ **2.Chemical Industry:** For measuring liquid levels in chemical storage tanks, reactors, and mixing vessels, where accurate level control is critical for safe operations.
- ◆ **3.Water & Wastewater Treatment:** These transmitters are used to monitor the water or wastewater levels in tanks, reservoirs, or sumps, ensuring proper flow and treatment processes.

- ◆ **4.Food & Beverage Industry:** In applications like tank level measurement for liquids such as milk, juices, syrups, and other food-grade liquids, magnetostrictive level transmitters are used for both quality control and inventory management.
- ◆ **5.Pharmaceutical Industry:** For precise measurement of liquids in storage tanks or during the production process, where hygiene and accuracy are essential.
- ◆ **6.Power Generation:** They are employed in monitoring the level of liquids in cooling towers, boiler feedwater tanks, and condensate tanks in power plants.
- ◆ **7.Pulp & Paper Industry:** Used to measure the level of chemicals, water, or slurries in various stages of the pulp and paper production process.
- ◆ **8.Marine Applications:** For monitoring fuel and ballast water levels in ships and vessels.

4.Parameters

Measuring range	0~5000mm (customizable)
Max detectable speed	10m/s
Output signal	4-20mA、0-5V、0-10V、CANopen、CANbus、EtherCAT (customizable)
Power supply	12-24V DC
Resolution	1: $\pm 0.1\text{mm}$ (range<400mm) ; 2: range $\div 4096$ (range>400mm)
Non-linear error	1: $\pm 0.1\text{mm}$ (range<400mm) 2: 0.05%F.S(range>400mm)
Repeat accuracy	$\pm 0.1\text{mm}$
Temperature effect	$\leq 0.005\% \text{F.S}/^{\circ}\text{C}$
Insulation pressure resistance	AC 500V/1min/1mA
Short circuit protection	Grounding protection
Reverse connection protection	Yes
Working temperature	-40℃ ~ +80℃
Humidity/dew point	Humidity 90%, no condensation
Storage temperature	-45℃ ~ +100℃
Protection	Wetted part: IP68; Electronic compartment: IP67~IP68 (optional)
Wetted material	PFA
Electronic compartment	PP
Float specifications	$\Phi 40 \times H50 \times D12$
Guide rod specifications	$\Phi 12$
Working pressure	<1.0MPa
Electrical interface	Aviation plug M12*1
Installation method	Vertical installation

Note: Users can customize communication protocols and products according to your needs.

Focus on sensor & control since 1999

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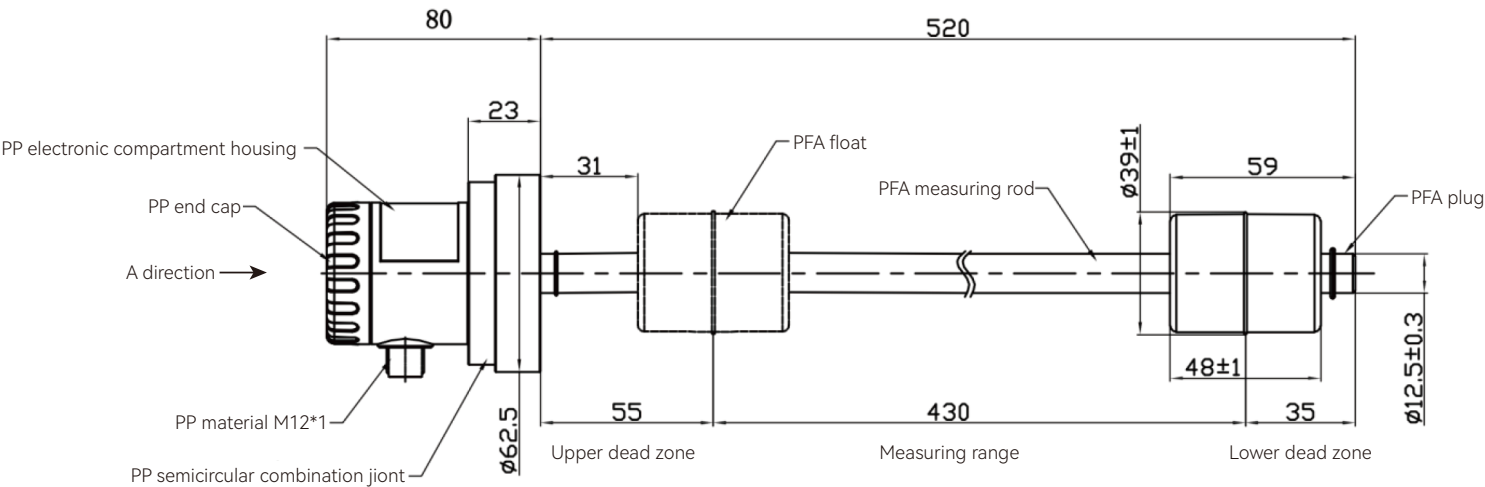
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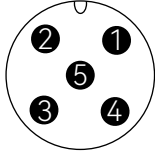
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5.Drawing



6.Wiring Diagram

P50 Pin (Analog 4-wire)	Cable color and function definitions
	1. Brown: 24V DC ±20% power supply 2. White: 0V DC power supply circuit 3. Blue: Position signal + 4. Black: Position signal + 5. Empty: No connected

7.Product Selection

WY8030 Magnetostrictive	
Selection rules	Product series - R : high protection level external type; L : strong acid and alkali corrosion resistant type
	Resolution - 1μm 10 μm
	Non-linear accuracy - A : ±100μm; B : ±30μm
	Signal output - A : Current 4-20mA ; V : Voltage 0-10V ; C : CANopen ; E : EtherCAT
	Housing material - 4 :SS304 ; 6 :SS316L ; P :PFA
	Electrical interface - 1 : M12*1 (aviation plug)
	Installation method - 1 : M18*1.5; 2 : PP movable chuck
	Measuring range - 25 -5000mm
	Magnets - P : PFA float; O : O-type magnet; X : X suspension magnet
	Wire length - D1 :1m ; D2 :2m ; D3 :3m ; ...

For example: WY8030-L-10-A-A-P-1-2-450-P-D1

Magnetostrictive L series; Resolution 10μm; Non-linear accuracy±100μm; Signal output 4-20mA; Housing material PFA; Electrical interface M12*1 (aviation plug); Installation method PP movable chuck; Measuring range 450mm; Magnets PFA float; Wire length 1m