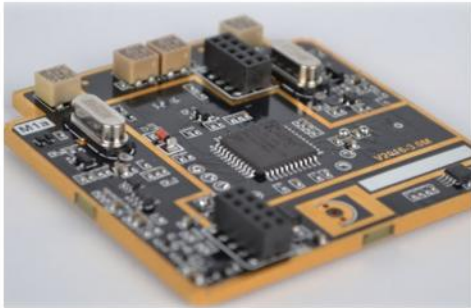


Magnetostrictive liquid level gauge is based on magnetostrictive principle and has high measurement accuracy. It is used to measure the continuity of liquid level and interface. It is composed of stainless steel measuring rod, magnetostrictive line, movable float, etc.



Overview

The MT series Magnetostrictive Liquid Level Meter is based on the magnetostrictive principle and is used to measure the continuous quantity of liquid level and interface. It adopts a two-wire output interface design with a standard 4~20mA current output mode. It has high measurement accuracy and is mainly used in various liquid tank level industrial measurement and control, such as petroleum, chemical raw material storage, industrial processes, biochemical, pharmaceuticals, food and beverage, tank farm management, and underground storage of gas stations. It can also be used for dam water level, reservoir water level monitoring, and sewage treatment, etc. The instrument consists of a circuit unit, an explosion-proof housing, and a rod-shaped sensing element, and there are multiple sensor models to choose from.

Working Principle

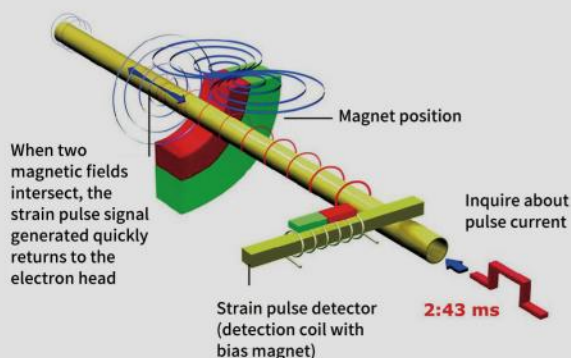
The Magnetostrictive Liquid Level Meter is composed of stainless steel (measuring rod), magnetostrictive wire (sensitive element-waveguide), and a movable float (with a permanent magnet inside).

When the magnetostrictive liquid level meter is working, the circuit unit will excite a pulsed current on the waveguide wire. When the current propagates along the waveguide wire, a pulsed current magnetic field will be generated around the wire. A float is attached to the outside of the measuring rod of the magnetostrictive liquid level meter. This float can move up and down along the measuring rod with the change of the liquid level. There is a set of permanent magnets inside the float. When the pulsed current magnetic field meets the magnetic field of the magnet inside the float, the magnetic field around the float changes, causing a twisted pulse to be generated in the waveguide wire made of magnetostrictive material at the position of the float. This pulse is transmitted back along the waveguide wire at a fixed speed. The position of the float, that is, the position of the liquid level, can be accurately determined by measuring the time difference between the pulsed current and the twisted wave.




Features

- Strong versatility: the measurement is not affected by the dielectric constant of the measured liquid, and changes in steam, temperature, and pressure on-site also have no effect on the measurement.
- Long lifespan: the measuring element does not come into contact with the liquid, ensuring a long lifespan.
- Interference resistance: it has lightning protection, radio frequency interference prevention, pollution prevention, dust prevention, and reverse positive protection functions.
- Accurate and reliable: high precision, high resolution, high stability, and high reliability.
- Key calibration: it can be calibrated via the electronic unit, and the high and low liquid levels can be directly calibrated on-site, making it convenient and fast to use. It does not require regular re-adjustment or maintenance.




Working Principle of Magnetostriction



Magnetostrictive Liquid Level Meter

Model	MT-100	MT-200	MT-300
Image			
Application	Liquid Level/Interface	Liquid Level/Interface	Liquid Level/Interface
Nonlinearity	±0.05% F.S.	±0.05% F.S.	±0.05% F.S.
Liquid Contact Material	304/316L	304/316L	304/316L
Measuring Range	300MM~6000MM	300MM~6000MM	300MM~6000MM
Repeatability	±0.004% F.S.	±0.004% F.S.	±0.004% F.S.
Process Connection	Thread: 1-1/2"~3"; Flange: 2"~6" (customizable)	Thread: 1-1/2"~3"; Flange: 2"~6" (customizable)	Flange: 2"~6" (customizable)
Process Temperature	-20~200°C	-20~200°C	-20~80°C/-20~200°C
Process Pressure	-1~5BAR (-100~500KPA)	-1~25BAR (-100~2500KPA)	-1~50BAR/10BAR (-100~5000KPA/1000BAR)
Signal Output	4-20mA Two-wire/RS485/HART	4-20mA Two-wire 24VDC / RS485 / HART	4-20mA Two-wire 24VDC / RS485 / HART
Junction Box Material	Aluminum Alloy Paint	Aluminum Alloy Paint	SUS304
Certification	CE / ATEX / ISO9001	CE / ATEX / ISO9001	CE / ATEX / ISO9001
Protection Level	IIP65/IP67/IP69K	IIP65/IP67/IP69K	IIP65/IP67/IP69K
Temperature Coefficient	±100 PPM/°C	±100 PPM/°C	±100 PPM/°C
Temperature Accuracy	±1°C	±1°C	±1°C
Maximum Load	$(VS-18) \div 0.02$ VS=Power Supply Voltage	$(VS-18) \div 0.02$ VS=Power Supply Voltage	$(VS-18) \div 0.02$ VS=Power Supply Voltage
Power Supply	18~30V	18~30V	18~30V

Magnetostrictive Liquid Level Meter

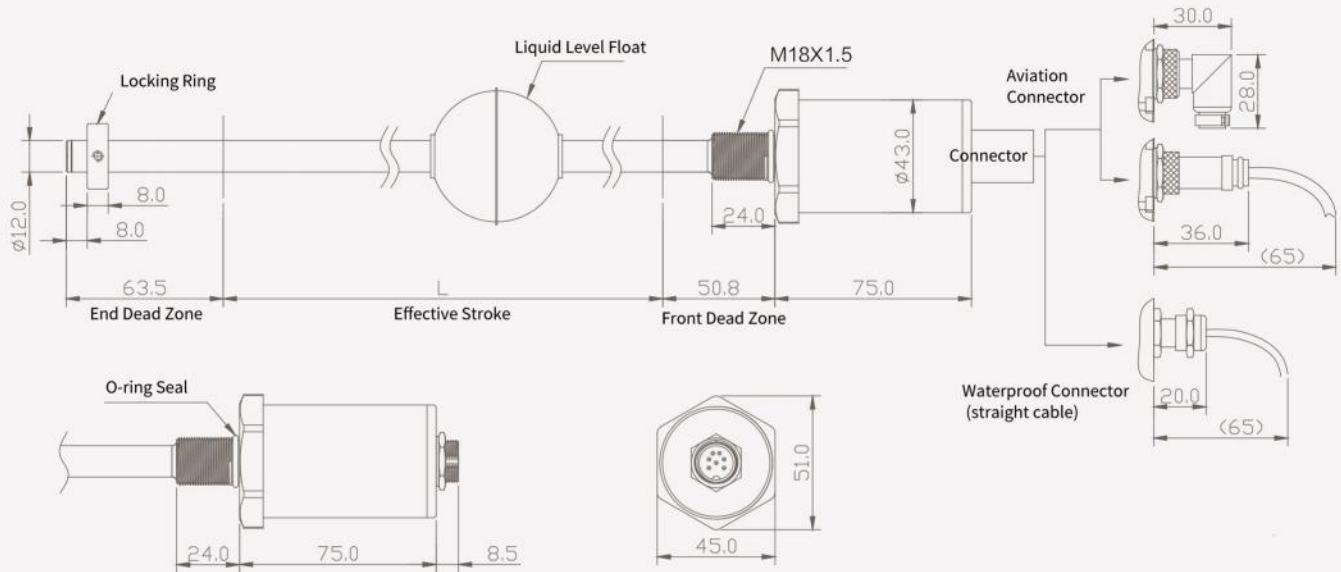
Model	MT-400	MT-500	MT-600
Image			
Application	Liquid Level/Interface	single/dual liquid level measurement and liquid level/interface measurement	Liquid Level/Interface
Nonlinearity	±0.05% F.S.	±0.05% F.S.	±0.05% F.S.
Liquid Contact Material	304/316L	304/316L	PP/PTFE
Measuring Range	50MM~6000MM	50MM~6000MM	50MM~2000MM
Repeatability	±0.004% F.S.	±0.004% F.S.	±0.004% F.S.
Process Connection	Thread: 1-1/2"~3"; Flange: 2"~6" (customizable)	Thread: 1-1/2"~3"; Flange: 2"~6" (customizable)	Thread: 1-1/2"~3"; Flange: 2"~6" (customizable)
Process Temperature	-20~120°C(customizable)	-20~120°C(customizable)	-20~80°C
Process Pressure	-1~30BAR (-100~3000KPA)	-1~60BAR (-100~6000KPA)	-1~60BAR (-100~6000KPA)
Signal Output	4-20mATwo-wire / RS485 / HART	4-20mATwo-wire / RS485 / HART	4-20mATwo-wire / RS485 / HART
Junction Box Material	Aluminum Alloy Paint / SUS304	Aluminum Alloy Paint / SUS304	Aluminum Alloy Paint / pp / SUS304
Certification	CE / ATEX / ISO9001	CE / ATEX / ISO9001	CE / ATEX / ISO9001
Protection Level	IP65/IP67/IP69K	IIP65/IP67/IP69K	IIP65/IP67/IP69K
Temperature Coefficient	±100 PPM/°C	±100 PPM/°C	±100 PPM/°C
Temperature Accuracy	±1°C	±1°C	±1°C
Maximum Load	$(VS-18) \div 0.02 VS = \text{Power Supply Voltage}$	$(VS-18) \div 0.02 VS = \text{Power Supply Voltage}$	$(VS-18) \div 0.02 VS = \text{Power Supply Voltage}$
Power Supply	18~30V	18~30V	18~30V

Magnetostrictive Liquid Level Meter

Model	MT-700	MT-800	MT-900
Image			
Application	Liquid Level/Interface	Liquid Level/Interface	Liquid Level/Interface
Nonlinearity	±0.05% F.S.	±0.03% F.S.	±0.05% F.S.
Liquid Contact Material	PP/PTFE	304/316L	PP/PTFE/SUS304
Measuring Range	50MM~2000MM	300MM~6000MM	300MM~6000MM
Repeatability	±0.004% F.S.	±0.004% F.S.	±0.004% F.S.
Process Connection	Thread: 1-1/2"~3"; Flange: 2"~6" (customizable)	Thread: 1-1/2"~3"; Flange: 2"~6" (customizable)	Thread: 1-1/2"~3"; Flange: 2"~6" (customizable)
Process Temperature	-20~80°C	-20~80°C	-20~80°C
Process Pressure	-1~5BAR (-100~500KPA)	-1~25BAR (-100~2500KPA)	-1~25BAR (-100~2500KPA)
Signal Output	4-20mA Two-wire / RS485 / HART LCD display	4-20mA Two-wire 24VDC	4-20mA Two-wire 24VDC
Junction Box Material	Aluminum Alloy Paint / pp / SUS304	SUS304	SUS304
Certification	CE / ATEX / ISO9001	CE / ATEX / ISO9001	CE / ATEX / ISO9001
Protection Level	IIP65/IP67/IP69K	IIP65/IP67/IP69K	IIP65/IP67/IP69K
Temperature Coefficient	±100 PPM/°C	±100 PPM/°C	±100 PPM/°C
Temperature Accuracy	±1°C	±1°C	±1°C
Maximum Load	$(VS-18) \div 0.02$ VS=Power Supply Voltage	$(VS-18) \div 0.02$ VS=Power Supply Voltage	$(VS-18) \div 0.02$ VS=Power Supply Voltage
Power Supply	18~30V	18~30V	18~30V

Magnetostrictive Liquid Level Meter

Structural Form



Float Ball Specifications

Model	Size (A-B-C)	Specific Gravity (g/cm ³)	Pressure Resistance (bar)	Material	Max Temperature Resistance (°C)	Applicable Rod Diameter (mm)	
S3	42x 50x 15	E>0.6	10	SUS316L	200	$\phi 12.7$	
S4	45x 55x 15	E>0.5	10	SUS316L	200	$\phi 12.7$	
S6	45x 55x 18	E>0.7	10	SUS316L	200	$\phi 14$	
S7	75x 108x 20	E>0.5	10	SUS304	200	$\phi 16$	
S5	52x 52x 15	E>0.55	25	SUS316L	200	$\phi 12.7$	
S8	75x 75x 23	E>0.7	25	SUS304	200	$\phi 16$	
S9	150x 150x 30	E>0.5	15	SUS304	200	$\phi 22$	
P1	40x 50x 22	E>0.85	Atmospheric Pressure	PP	80	$\phi 18$	
T1	60x 70x 24	E>0.9	Atmospheric Pressure	PTFE	200	$\phi 18$	
SS	Special Customization	Special Customization	Special Customization	Special Customization	Special Customization	Special Customization	