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SCZ01 Magnetostrictive Level Transmitter

Features

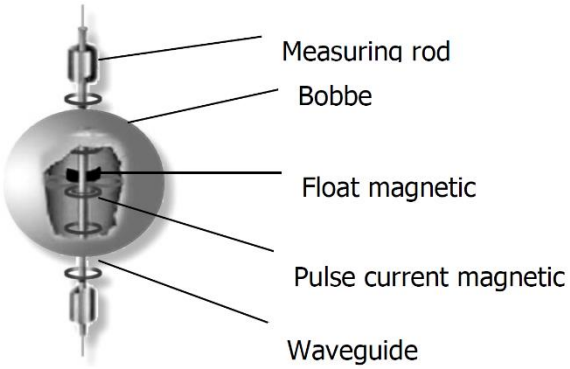
- High accuracy and stability
- Anti-static, anti-surge, anti-interference and electromagnetic compatibility design
- High-pressure vessel pressure pipe design, maintenance without pressure relief
- Reasonable product structure, high precision and low maintenance rate

Introduction

Magnetostrictive liquid level sensor (hereinafter referred to as sensor, including common type and explosion-proof type) is used for continuous measurement of liquid level and interface. In addition, magnetostrictive liquid level sensors are used in a wide range of applications, including: petroleum, chemical raw material storage, industrial processes, biochemistry, pharmaceuticals, food and beverage, tank management, underground filling of gas stations, etc. Industrial metering and control, dam water level, reservoir water level monitoring and sewage treatment, etc.

Working Principle

The structural part of the magnetostrictive liquid level sensor is composed of a stainless steel tube (rod), a magnetostrictive wire (waveguide wire), a movable float (with a permanent magnet inside), like below.



Magnetostrictive liquid level sensor structure

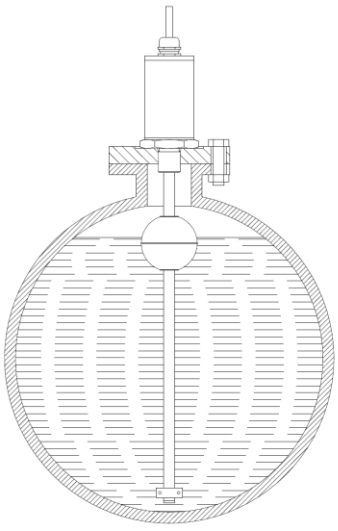
When the sensor is operating, the circuit portion will excite a pulsed current on the waveguide wire that will generate a pulsed electromagnetic field around the waveguide wire as it propagates along the waveguide wire. A float is arranged outside the sensor rod, and the float can move up and down along the rod as the liquid level changes. There is a set of

permanent magnetic rings inside the float. When the pulsed current magnetic field meets the magnetic ring magnetic field generated by the float, the magnetic field around the float changes so that the waveguide wire made of magnetostrictive material generates a torsional wave pulse at the position where the float is located. This pulse is along a fixed speed. The waveguide wire is transmitted back and detected by the detection mechanism. By measuring the time difference between the pulse current and the torsional wave, the position of the float, that is, the position of the liquid surface, can be accurately determined.

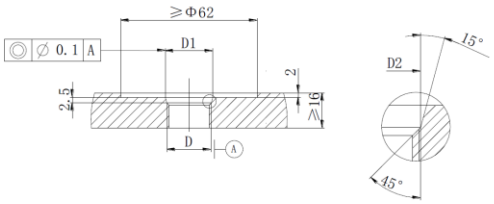
Specification

- Pressure range: 0~6000mm(Hard rod) / 0~25000mm(Soft rod)
- Accuracy: ±1mm
- Resolution Ratio:0.1mm
- Process connection: G1/2 male thread (or as per customer's requirement)
- Ambient temp.: -25~70℃
- Medium temp.: -25~150℃
- Power supply: 24VDC
- Output signal: 4~20mADC(2/3 wires)
- Temperature Measurement: -25~70℃
- Temperature error:±0.5℃
- Type of explosion protection: Exia II BT4
- Communication protocol: RS-485, RS-232, Modbus, hart. Etc, (or as per customer's requirement)

Installation Guide



The size of the mounting hole is shown in the figure below:

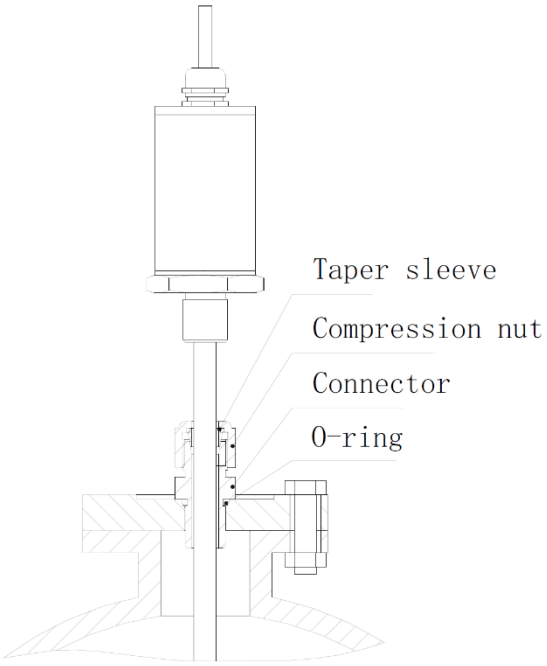


D	D1	D2
M18x1.5	$\Phi 20^{0}_{-0.1}$	Φ18.7
M20x1.5	$\Phi 21.6^{0}_{-0.1}$	Φ20.3

As shown in the figure, the product is installed vertically, and the installation slope should not begreater than 5 degrees; when the float is installed, the hemisphere marked by NO (upper) should be above the liquid level; the dead ends of the measuring rods are measured; when

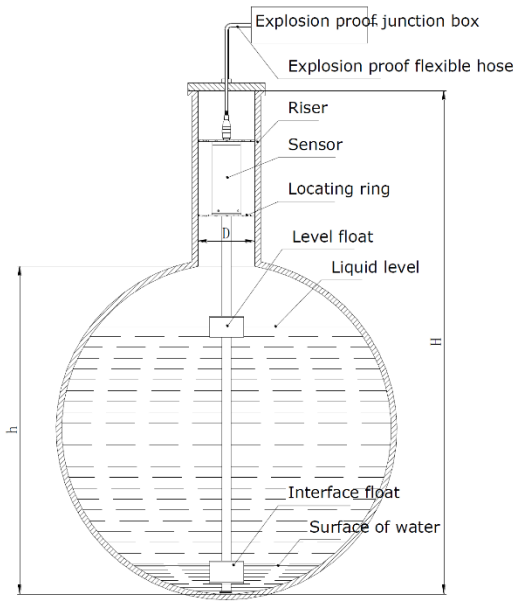
the locking ring is fixed The lower end should be flush with the bottom end of the rod.
This method is suitable for most tank measurement. You can use the connecting flange provided by the manufacturer or the user-specified flange to screw the liquid level sensor mounting thread directly into the flange.
Installing with an active connector This method is suitable for measuring height-adjustable can open and sealed cans.

1,Installing with an active connector



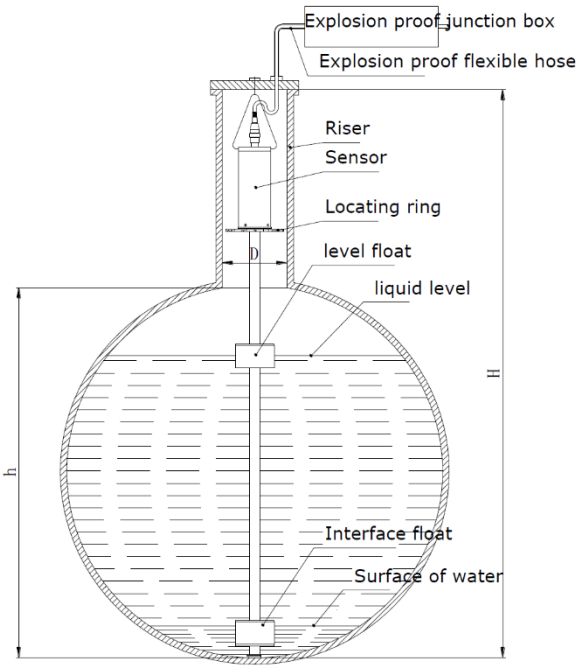
This method is suitable for measuring height-adjustable can open and sealed cans.

2,Positioning ring installation



The sensor rod touches the bottom of the tank, and the positioning ring of the electronic warehouse is used to prevent the sensor from swinging. The sensor electronic warehouse and the outgoing cable are in the oil tank.
Note：
h=tank height
H=h+ riser height
D=Φ100mm Standpipe height ⩾300mm

3, Suspended installation



The sensor is hung under the flange of the tank mouth, and the measuring rod is kept at a certain distance from the bottom of the tank (2~5mm). The positioning ring of the electronic warehouse is used to prevent the sensor from swinging. The sensor electronic warehouse and the outgoing cable are in the oil tank.

Note:

h=tank height

H=h+ riser height

D=Φ100mm

Standpipe height ⩾300mm

Order Guide

SCZ01	Magnetostrictive Level Transmitter			
	Range			
	[0～X]m	X：the length of probe		
		Code	Output signal	
		E	4～20mADC	
		R4	RS485	
			Code	Others
			B_1	DIN43650 connector
			B_2	M12 connector
			B_3	Cable exit
			C_2	G1/2 male thread
			F	Flange(please mention size)
			D	Dual float

SCZ01	[0～1m]	R4	B_3F	the whole spec