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VAT No. 4160223584
Reg No. 2002/053292/23

Magnetic Flapper Level Indicator

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1 Magnetic Level Overview

UHZ series magnetic level meter is for on-site level indication, use float as measurement unit, the magnet drive triggered column showing the level without energy. It can work from low temperature to high temperature, from vacuum to high pressure, high viscosity, corrosion and so on. It measures the level safely and reliable. Levels can be measured Under various conditions, using a by-pass installation. The level is visual and can also be fitted with 4~20Ma transmitter or Hi/Lo switches.

Installation of the bypass chamber with Magnetic flapper level indication are provided as a side mounting, top mounting, top & side mounted. Three different types are available to match different types of product medium. We offer stainless steel, stainless steel lined with PTFE, ABS, PP-R, PVC, UPVC and other materials, including stainless steel, PTFE lining, ABS, PP-R, PVC, UPVC material for acid and alkali Corrosive media.

Products are widely used in electric power, petroleum, chemical, metallurgy, food and other industries in the production process level measurement and control.

2 Structure principle

Magnetic sub-level gauge is based on the buoyancy principle related to viscosity of the fluid, and the principle of magnetic force at work. As the Float tube on the liquid level in the measuring chamber rise, and fall as the liquid level changes the permanent magnet in the float through the magnetic coupling will flip the red, white indicator flaps 180°, to indicate in red the level of the liquid in the chamber. As the level drops in the chamber, the flaps will flip back to white to indicate the level falling.

3 Model

Basic model:
Suitable for level measurement of liquid medium with operating pressure less than 4.0MPa, and working temperature less than 200℃.

Anti-corrosion model:
It's suitable for acid, alkali and many organic solvents. It incorporates a PTFE lined stainless steel, PPR, and PVC as body material.

Jacket model:
Applied to antifreeze, insulation and heating level measurement applications. Jacket type: steam jacket, water cycle jacket, vacuum jacket, electric heating jacket, and electric warming jacket.

Jacket Type:

Steam jacketed and water jacketed circulation: the main chamber plus the jacket layer. the insulation jacket tubing circulates steam or water. used to maintain the temperature of the measured medium in the measurement chamber, to prevent the measured medium temperature to change due to freezing, ice, etc.

Vacuum jacketed (low frost type): The main chamber is protected against reaching critical temperature point by means of vacuum jacket insulation.
This is essential in environments where temperatures can go below frost point. This will prevent the level measuring chamber temperature to drop down to ultra-low temperature making sure that the process is not compromised.

Electric heating type: The main chamber, plus an electric oil heating jacket, creates a built-in electric heating device, that passes the heat conducting oil to the measuring cylinder uniform, played the role of heat insulation. Note: before first use to raise the safety line of heat-conducting oil, otherwise it will damage the heating device.

d) **Electric warming type**: the main pipe band plus a self-limiting temperature heating device, to play the role of heat insulation.

High temperature high pressure model:

It's suitable for high temperature and high pressure level measurement occasions. The maximum process temperature is 520℃. The maximum working pressure is 32MPa.

1. LED bi-color model:

UHZ-D electronic color magnetic level gauge magnetic flap is a new generation of new products, it can clearly show the red and green beam of light level during the day and viewing distance 60m, the night up to 200 ~ 300m. Level gauge magnetic flap easy to stick deposited with the dust a long time, especially in steel mills, over time it is easy to stick deposited thin iron, the magnetic flap coverage of red and green colors, so that it cannot see the level, the other Level gauge magnetic flap biggest drawback is not light show at night cannot be observed. HHUHZ-D electronic color magnetic sub-level gauge to solve the above problem, a breakthrough in circuit design, measurement range of similar products on minor faults, while ensuring low power consumption, any measurement can be customized highly.

With magnetic flap / turn indicator column than its main features:

LED display: red and green light beam clearly show the level, suitable for light application of dark places, night observation is more striking;

Level shows a clear, bright color, observation angle, visible from far away, long-term use is not easy to stick deposited dust;

Reasonable design, simple structure, easy maintenance, the measured medium and the display system completely separated;

Media widely applied in hydrochloric acid, sulfuric acid and other corrosive solution measurement, has a good seal.

Main technical parameters

Temperature	≤ 300℃
Display color	Green liquid red gas
Visible distance	60m, 200 ~ 300 m at night
Power supply voltage	AC 220V (with adapter) or DC24V
Range	Requirements may be made according to the site

4 Limit control and signal transmission

1. The limit switch output.
   The main pipe in the level meter set by the user, the lower limit position outside the installation controller, the controller has to keep with the role of the magnetic switch from the use of magnetic float moves with the liquid level to make switching action, to achieve the alarm or limit control.

2. Signal transmission.

   Level gauge installed at the transmitter, the transmitter unit and a transmission unit by the measurement of two parts, which move up and down through the sub-Maglev, the magnetic coupling of the guide bar moves within the measuring cell in order to obtain resistance signal change, conversion Into 0 ~ 10mA or 4 ~ 20mA standard current signal output, and digital display instrument or computer connection, to remote purposes.

5 Main Specifications

Technical parameters	Side-mounted				
	Basic model	Jacket model	High temperature High pressure model	Anti-corrosion model	
				Stainless Steel PTFE lining	Economy
Measuring range	200~6000mm, other sizes can be customized			200 ~ 4000mm	
Working pressure	0~4MPa	0.6-2.5MPa	0.6-32MPa	0.6-2.5MPa	0.6-1.6MPa
Operating temperature	-20~200℃	＜520℃		-20~200℃	-20~90℃
Density	0.45-2.0g/cm^3			0.5-2.0g/cm^3	
Connection	Flange connection: DN20, DN25 or other (According to customer requirements). Threaded connections, welded pipe and other technology interfaces optional.				
Flange Standard	HG20592~20635-97, Other flange standards can be customized.				
Jacket Interface	/	DN20 or G1/2" Male	/	/	/
Material	1Cr18Ni9Ti, 316L			Stainless Steel PTFE lining	PPR,ABS,UPVC,PVC
Optional items	Liquid level switches, signal transmission, drain valve, the top vent valve, drain / exhaust bolts.				

Technical parameters	Top-mounted	Top-mounted Side display
Measuring range	200~5000mm	0~0.5m or 0~200m (Display can be segmented.)
Working pressure	0.6-2.5MPa	0-1.6MPa
Operating temperature	≤520℃	-20~500℃
Medium Density	0.5~2.0g/cm^3	≥0.7g/cm^3
Connection	Flange DN80, DN100, DN125,DN150.	Flange DN150
Flange standard	HG20592~20635-97, Other flange standards, please specify.	
Material	1Cr18Ni9Ti, 316L	
Optional items	Liquid level switches, signal transmission.	

Limit switch parameters

Control sensitivity	10mm
Contact capacity	AC220V, 2A
Contact life span	5×10^4 times
Explosion proof character	ExiaIICT4 intrinsically safety.

Signal transmission parameters

Accuracy	±1.5%F.S
Output load	750Ω
Output signal	4~20mA, DC24V 0~10mA, AC220V
Explosion proof character	ExiaIICT4 intrinsically safety.

6 Mounting, Installation, and Maintenance

1 Before installation:

A plastic tape was insert into the tube to fix the float for transportation purpose. Remove the plastic tape from the drain valve before installation.

2 Installation:

- Level meter must be installed vertically, to ensure the float in the main pipe can running up and down freely.

- Regarding the level gauge, do not allow the main chamber near the magnet, otherwise it will affect the level meter working properly.

After installation, the flapper's white and red color may be mixed. Using the attached "calibrate magnet" to move along from the down to the up of the indicator outside the glass cover. So that the red flapper under the level, white flapper above the level.

3 Put into operation:

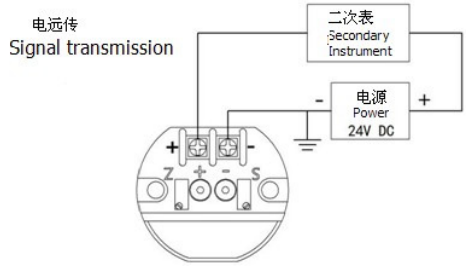
Before you put the level meter into use, first open the uper valve, and then slowly open the bottom valve, so that a smooth liquid medium flow into the main pipe. To avoid the sharp rising liquid medium, which will cause the flappers to turn into chaos. In case it does turn into chaotic malfunction, use the "calibrate magnet" to recover it.

4 Maintenance

- Avoid impurity or solid materials flow into the tube, which may cause the float to get stuck or reduce float buoyancy.
- Should solids or dirt get into to the liquid, open the drain valve to clear the sediments in the tube periodically, or even flush it out with water.
- If the flapper should malfunction during operation, use the "calibrate magnet" to recover it.
- After years of use, especially after long-term use under high temperature, it you could find that the flapper tracking is not flexible (Getting stuck in certain positions). First check whether the float magnet has not demagnetized, if so, replace the float.
- If you need to replace the float, open the bottom flange and insert the new float. You should pay attention to make sure the magnetic side of the float is at the top, do not reverse!

7. Wiring and output

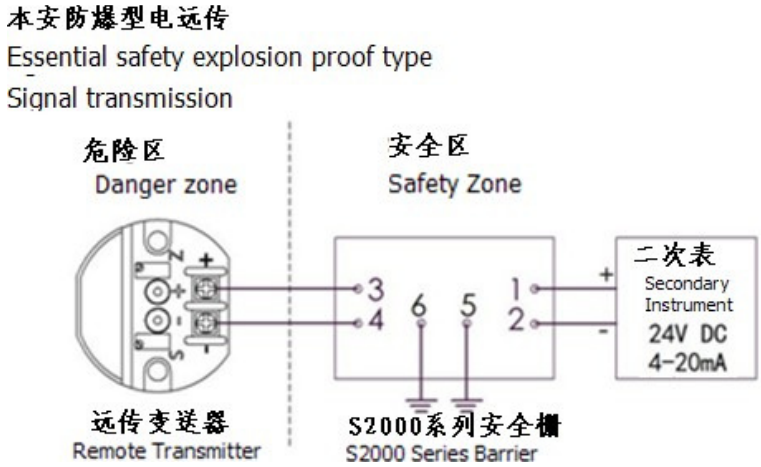
1 4-20mA transmission



2 Limit switch output.

The limit switch use NO or NC reed switch inside.

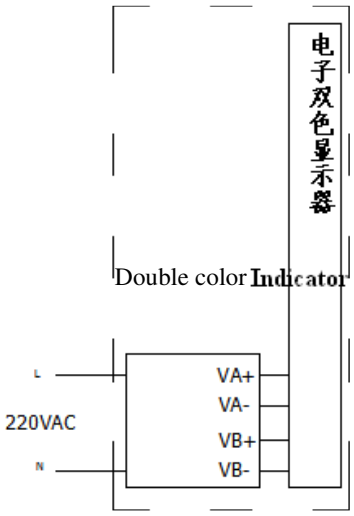
3 Explosion proof model wiring.



Note

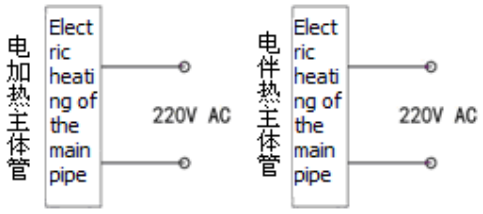
1. The transmitter has an external shell, the user must be grounded.
   The barrier should be used to comply with instructions about the content.
3 The transmitter and the barrier side of the connection cable for the two core shielded cable, wire cross-sectional area> 0.5mm2, allow the distribution of cable capacitance 0.8uF.

4 Electronic bi-color model wiring.



5 Electric heating model wiring.

电加热/电伴热供电系统： Electric heating / electric heating sup system:



电加热式，导热油加注方法：
从电加热层侧面接管孔加注导热油至安全线，不得低于或超过安全线

Electric heating, heat conduction oil filling method:
Took over from electrical heating layer side of the hole filling HTF to a safe line, not less than or exceed the safety line.

6. Quality Warranty

If user follow the instructed usage and storage specification, the product is with 1 year warranty begin from the date of delivery. The company provides free charge repair or replacement if product is in the scope of warranty such as bad quality. If damage caused by improper usage or storage, appropriate fee will be charged for repair.