



物位计选型样本

MATERIAL LEVEL METER
PRODUCT SELECTION CATALOGUE



中化天康科技（南京）有限公司
中国化学 ZHONGHUA TIANKANG TECHNOLOGY(NANJING)CO.,LTD



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企业简介

ENTERPRISE INTRODUCTION

为了深入贯彻习近平总书记关于混合所有制改革的重要论述，全面落实党中央国务院国企改革三年行动方案要求，2020年10月，经中国化学工程集团有限公司批准，由中国化学工程第十四建设有限公司与安徽天康（集团）股份有限公司共同出资成立所属子公司——**中化天康科技（南京）有限公司**。公司注册资本5000万元，位于国家级南京江北新区大厂街道新华路148号。

公司主要从事：压力芯片及智能仪表的研发和制造；智慧工地的设计和建设、仪器仪表及电线电缆、环保治理等产品的销售；国内外各类建设工程的联合承接等。

“十四五”期间，中化天康科技（南京）有限公司将紧紧抓住发展机遇，坚持走专业化、多元化、国际化的发展道路。通过不断优化经营布局、狠抓精细管理、推动技术创新，实现企业高质量超常规跨越式发展，努力将公司建设成为世界一流企业。

我们也诚挚邀请国内外各界朋友携手合作，通过大家的共同努力，让“世界更炫彩，生活更美好”。



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UHZ-50系列磁性翻柱液位计

UHZ-50 Magnetic Liquid Level Meter

一、概述

UHZ-50系列磁性翻柱液位计是一种浮球式金属管现场指示型液位计。该系列产品可以做到高密封、防泄漏和在高温、高压、高粘度、强腐蚀性条件下安全可靠地测量液位，全过程测量无盲区，显示醒目，读数直观，且测量范围大，配上液位报警、控制开关，可实现液位或界位的上、下限报警和控制，配上液位变送器，可将液位、界位信号转换成二线制4~20mA标准信号，实现远距离检测、指示、记录与控制。该系列产品广泛用于电力、石油、化工、冶金、环保、船舶、建筑、食品等各行业生产过程中的液位测量与控制。

二、原理

液位计是根据浮力原理和磁性耦合作用原理工作的。当被测容器中的液位升降时，液位计主导管中浮子也随之升降。浮子内的永久磁钢通过磁耦合传递到现场指示器，驱动红、白翻柱翻转180°；当液位上升时，翻柱由白色转为红色，当液位下降时，翻柱由红色转为白色，指示器的红、白界位处为容器内介质液位的实际高度，从而实现液位的指示。精密的红白磁性翻柱，普通型采用塑料树脂；高温型采用精密氧化铝陶瓷烧结工艺，嵌入高温永久磁钢耐温可达520℃。

三、选配项

配套TKL-121系列液位远传变送器

TKL-121系列液位远传变送器是将磁性系统耦合过来的液位信号作用于传感器内的电阻链上的每一个干簧管，引起输出电阻连续变化，从而引起测量电压的连续变化，此电压与罐体液位成正比，通过变送转换器，输出二线制4-20mA模拟信号，也可以带现场显示和HART通讯协议。

配套TKWL-130系列磁致伸缩液位变送器

TKWL-130系列磁致伸缩变送器是将磁性系统耦合过来的液位信号，以间隔1.5μs发送的脉冲，精确地测量液位计中磁浮子的位置。这个脉冲产生的磁场沿波导管向下传导。当磁浮子的磁场和脉冲电流磁场相遇时，产生返回脉冲。敏感元件探测到这个返回脉冲。根据电流脉冲与返回脉冲之间的时间，通过单片机计算出浮子的位置，确定被测液位和界位。

TKWL-130系列产品适用于对测量精度要求高的场合，也适用于高温型磁翻板液位计的远传变送，变送器输出二线制4~20mA DC信号，可带HART通讯协议，也可输出RS485信号。

四、技术参数

测量范围：300~15000mm；

精度： $\pm 10\text{mm}$ ；

介质密度： $\geq 350\text{kg/m}^3$ ；

环境震动： $\leq 25\text{Hz}$ ；

介质粘度： $\leq 0.4\text{PaS}$ ；

对于粘度大的介质或温度低时易结晶的介质，可选用加热夹套型液位计。

Overview

UHZ-50 magnetic liquid level meter is a floater type metal tube liquid level meter with scene indications. This series of products can reach strict sealing and leakproofness, and it can also safely and reliably measure the liquid level under the condition of high temperature, high pressure, high viscosity and strong corrosivity. In its whole measurement process, it has no blind area, striking display, visualized reading and large measuring range. Combined with liquid level alarming and control switch, it can realize limit alarming and control of the liquid level or the boundary level. Combined with liquid level transmitter, it can convert the liquid level or the boundary level signals to two-wire system 4-20ADC standard signals, thus realizing distant detection, direction, record and control. This series of products are widely used in the liquid level measurement and control in the manufacturing process of industries like electricity, petroleum, chemical industry, metallurgy, environmental protection, shipping, construction and food.

Principle

The liquid level meter operates according to principles of buoyancy effect and magnetic coupling. When the liquid level in the measured container rises or falls, the floater in the primary duct of the liquid level meter will rise or fall accordingly. The permanent magnetic steel inside the floater transmits to the site indicator, driving the red and white reversible column to reverse 180°; when the liquid level rises, the reversible column turns from white to red, and when the liquid level falls, it turns from red to white. The red and white boundary on the indicator is the actual height of the medium liquid level in the container, thus realizing indicator of liquid level. As to the precise red and white magnetic reversible column, the ordinary type uses plastic resin; the high temperature type uses precise alumina ceramics sintering technology, whose implanted high temperature permanent magnetic steel can reach temperature resistance of 520°C.

Optional Attachment

Matched TKL-121 liquid level teletransmission transmitter

TKL-121 liquid level teletransmission transmitter works the liquid level signal from magnetic system coupling on every reed switch in the resistance chain inside the sensor, which gives rise to continuous changes of output resistance, thus causing the continuous change of measuring voltage. This voltage is in direct proportion to the tank's liquid level. Through the transmitting converter, it outputs two-wire system 4-20mA analog signal, which can also be equipped with status display and HART communication protocol.

Matched TKWL-130 magnetostriiction liquid level transmitter

TKWL-130 magnetostriiction liquid level transmitter accurately measures the position of the magnetic floater in the liquid level meter with the pulse sent at the interval of 1.5μs. The magnetic field produced by this pulse transmits downward along the waveguide. When the magnetic field of the magnetic floater meets with the pulse current of the pulse, reset pulse emerges. Then the sensitive element detects this reset pulse. According to the time between the current pulse and the reset pulse, the single chip can work out the position of the floater, thus confirming the measured liquid level and boundary.

TKWL-130 products apply to occasions with higher requirements of measurement accuracy as well as teletransmission and transmission of magnetic liquid level meter. The transmitter outputs two-wire system 4-20mA DC signals, which can be equipped with HART communication protocol and output RS485 signals.

Technical Parameters

Measurement range: 300-15000mm

Precision: $\pm 10\text{mm}$

Medium density: $\geq 350\text{kg/m}^3$

Environmental vibration: $\leq 25\text{Hz}$

Medium viscosity: $\leq 0.4\text{PaS}$

As to medium with higher viscosity or medium that are easy to crystallize under low temperature, heating jacket liquid level meter can be used.

材质 : 304、316、316L、Ti、PP、PVC、PTFE、Ta、Monel、Hastelloy C-276 ;

可特殊定做其他材质 ;

过程连接法兰 :

标准型HG20592-20635 DN25 PN1.0-PN3.2 ;

可特殊定做其他标准法兰 ;

工作温度 : -196~520°C ;

防护等级 : IP66。

Material: 304, 316, 316L, Ti, PP, PVC, PTFE, Ta, Monel, Hastelloy C-276, or other customized materials can be made.

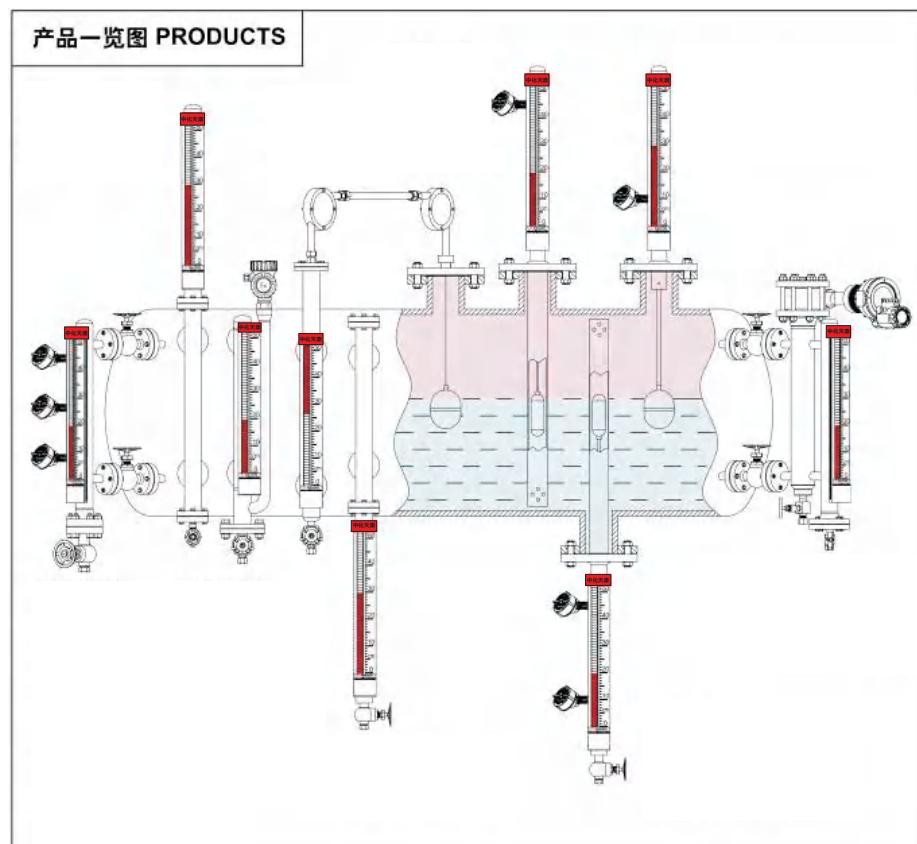
Process connecting flange:

Standard type HG20592-20635 DN25 PN1.0-PN3.2.

Other connecting flange can be customized.

Operating temperature: -196~520°C

Protection grade: IP66



五、安装使用和维护

1、液位计安装必须垂直，以保证浮球组件在主体管内 能上下运动自如。

2、最好在容器与液位计之间装上截止阀，以便清洗和检修液位计时切断物料。

3、液位计主体管周围不容许有导磁物体靠近，否则直接影响液位计正常使用。

4、液位计安装完毕后，需要用磁钢进行校正，对翻柱导引一次使零位以下显示红色，零位以上显示白色。

5、液位计投入运行时应先打开上端截止阀，再打开下端进料引液管阀门，让液体介质平稳进入主体管，避免液体介质带着浮球组件急速上升，而造成翻柱失灵和乱蹦。（若发生此现象待液面平稳后可用磁钢重新校正。）

6、为了不使浮球组件在运输工程中损坏，故出厂前浮球组件取出液位计主体管外。待液位计安装时打开底部排污法兰，再将浮球重新装入主体管内，注意浮球组件重的一头朝上，不能倒装。

7、根据介质情况，可定期打开排污法兰清洗主体管内沉淀物。

Installation and Maintenance

1. The liquid level meter must be installed vertically so as to make sure that the floater element can move up and down freely in the main tube.

2. It is better to install a stop valve between the container and the liquid level meter so as to make it possible to cut off the material when cleaning and maintaining the liquid level meter.

3. Magnetic objects are not allowed to get close to the main tube of the liquid level meter, or it will directly influence the normal usage of the liquid level meter.

4. After the installation of the liquid level meter, magnetic steel should be used to check, making the reversible column guide display red below zero and white above zero.

5. In actual operation, the stop valve at the upper end should be opened first, and then the feeding liquid guide tube valve should be switched on to make the liquid medium enter the main tube smoothly in order to avoid the fact that the liquid medium rises rapidly with the floater element, which may lead to malfunction and jumping of the reversible column. (If this happens, when the liquid level becomes smooth, magnetic steel can be used to recalibrate.)

6. To avoid the damage to the floater element in transportation process, before delivery, the floater element is taken out of the main tube of the liquid level meter. When installing the liquid level meter, first open the sewage disposal flange at the bottom, and then install the floater into the main tube. Pay attention to it that the heavier end of the floater element is upwards, which can't be inverted.

7. According to different conditions of the medium, the sewage disposal flange can be opened regularly to clean the sediment inside the main tube.

六、结构外形尺寸

Structure Dimension

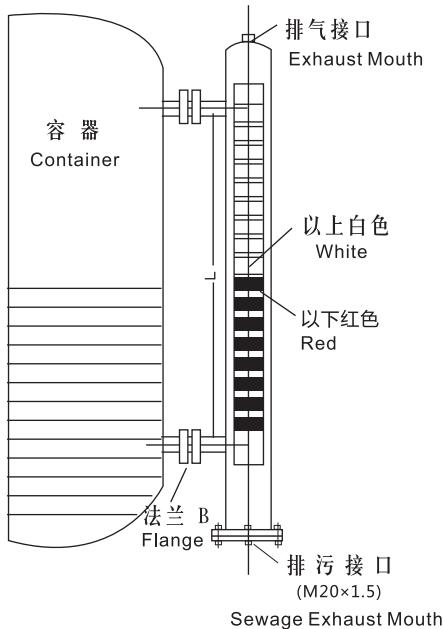


Figure 1 Working Theory

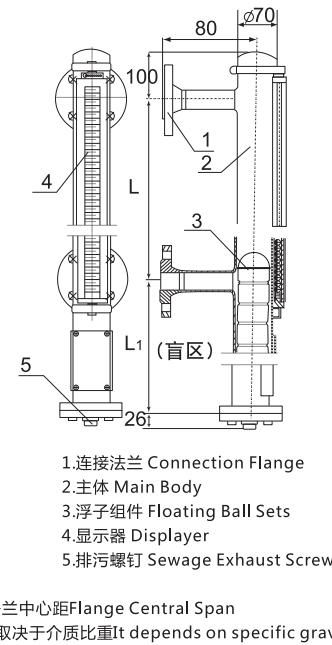


Figure 2 (Basic Type)

七、特点

- 1、适用于容器内液体介质的液位测量，除现场显示外，还可配远传变送器、液位控制器等功能。
- 2、显示直观醒目，可根据用户要求改变显示方向。
- 3、测量范围大，不受容器高度限制。
- 4、显示器组件与被测介质完全隔离，故密封性好，可靠安全。
- 5、结构简单，安装方便，维修简易。
- 6、耐腐蚀，防爆。

Features

1. It applies to the liquid level measurement of liquid medium inside the container. Apart from status display, it can also be equipped with functions like teletransmission transmitter and level controller.
2. Its display is visualized and striking, and the display direction can be changed according to users' requirements.
3. The measurement range is large, which is not limited to the height of the container.
4. The display element is completely separated from the measured medium, so it has good leakproofness, both reliable and safe.
5. It has simple structure, easy to install and maintain.
6. It is corrosion resistant and blast-proof.

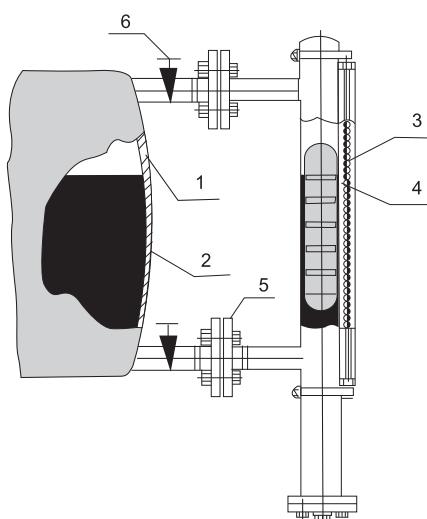


图3. 安装图 Figure 3 Installation Figure

UHZ-50系列磁性翻柱液位计订购信息

Order Information of UHZ-50 Magnetic Liquid Level Meter

UHZ-50						
安装方式 Installation method						
底-侧式 Bottom-side type	A					
侧-顶式 Side-top type	B					
侧-侧式 Side-side type	C					
顶部 Top	D					
其他安装方式 Other installation methods	Z					
主体管材质 Main tube material						
304	1					
316L	2					
PP	3					
PVC	4					
304+PTFE	5					
316+PTFE	6					
其他特殊材质 Other special material	Z					
排污法兰 Sewage disposal flange						
盲板排污法兰 Blind plate sewage disposal flange	F					
排污法兰配排污螺钉 Sewage disposal flange matched with sewage disposal bolt	L					
排污法兰配排污阀 Sewage disposal flange matched with blow-down valve	P					
配套仪表与安装类型 Matched meter and installation type						
无配套仪表 No matched meter	B0					
上接线盒式配TKL-121变送器 Upper junction box type matched with TKL-121 transmitter	B1					
下接线盒式配TKL-121变送器 Bottom junction box type matched with TKL-121 transmitter	B2					
上接线盒式配TKWL-130变送器 Upper junction box type matched with TKWL-130 transmitter	B3					
接线盒形式 Junction box form						
无接线盒 No junction box	P					
普通型 Ordinary type	S					
隔爆 ExdⅡBT4-6 Explosive-proof ExdⅡBT4-6	D					
本安 ExaⅡCT4-6 Intrinsic safety ExaⅡCT4-6	E					
测量范围 Measurement range						

UHZ-50					
过程连接 Process connection 法兰 Flange 螺纹 Thread 短管 Short pipe					
工作压力 Operating pressure					
工作温度 Operating temperature					
介质密度 Medium density					
附件选择 Attachment selection					
无附件 No attachment	0				
电伴热带 Electric tracing band	1				
蒸汽伴热 Steam tracing	2				
真空夹套 Vacuum jacket	3				
凸轮开关 Cam switch	4				
干簧开关 Reed switch	5				
其他 Others	9				

UHZ-50/S系列浮球液位计

UHZ-50/S Floater Liquid Level Meter



一、概述

UHZ-50/S系列液位变送器利用带环形磁钢的浮球随液位升降，使主体管内的干簧管吸合，将液位转换成相应的电阻输出，将其输出电阻信号经专用模块处理将电阻信号转换成二线制的4-20mA信号输出。

UHZ-50/S系列液位变送器用于化工、电力、造纸、造船、环保、食品等行业，承压容器内介质的液位的测量，用于地下槽、池，高层水箱的液位测量，更为简单、可靠，最为理想。UHZ-50/S系列浮球液位变送器的材质为不锈钢耐腐蚀，适用于易燃易爆的场所。

二、工作原理

UHZ-50/S系列液位变送器的主导管内装有一组干簧管和精密电阻，当管外带有环形磁钢的浮球随液位上下变化，相应在主导管内位于液面处的干簧管在磁场作用下依次闭合使回路电阻值发生变化，经专用模块转换成电流输出。

Overview

UHZ-50/S liquid level transmitter makes use of the floater with annular magnetic steel which rises or falls with the liquid level so as to make the reed switch inside the main tube pick up, convert the liquid level into corresponding resistance output, thus changing the output resistance signal into the two-wire system 4-20mA signal output through exclusive module processing.

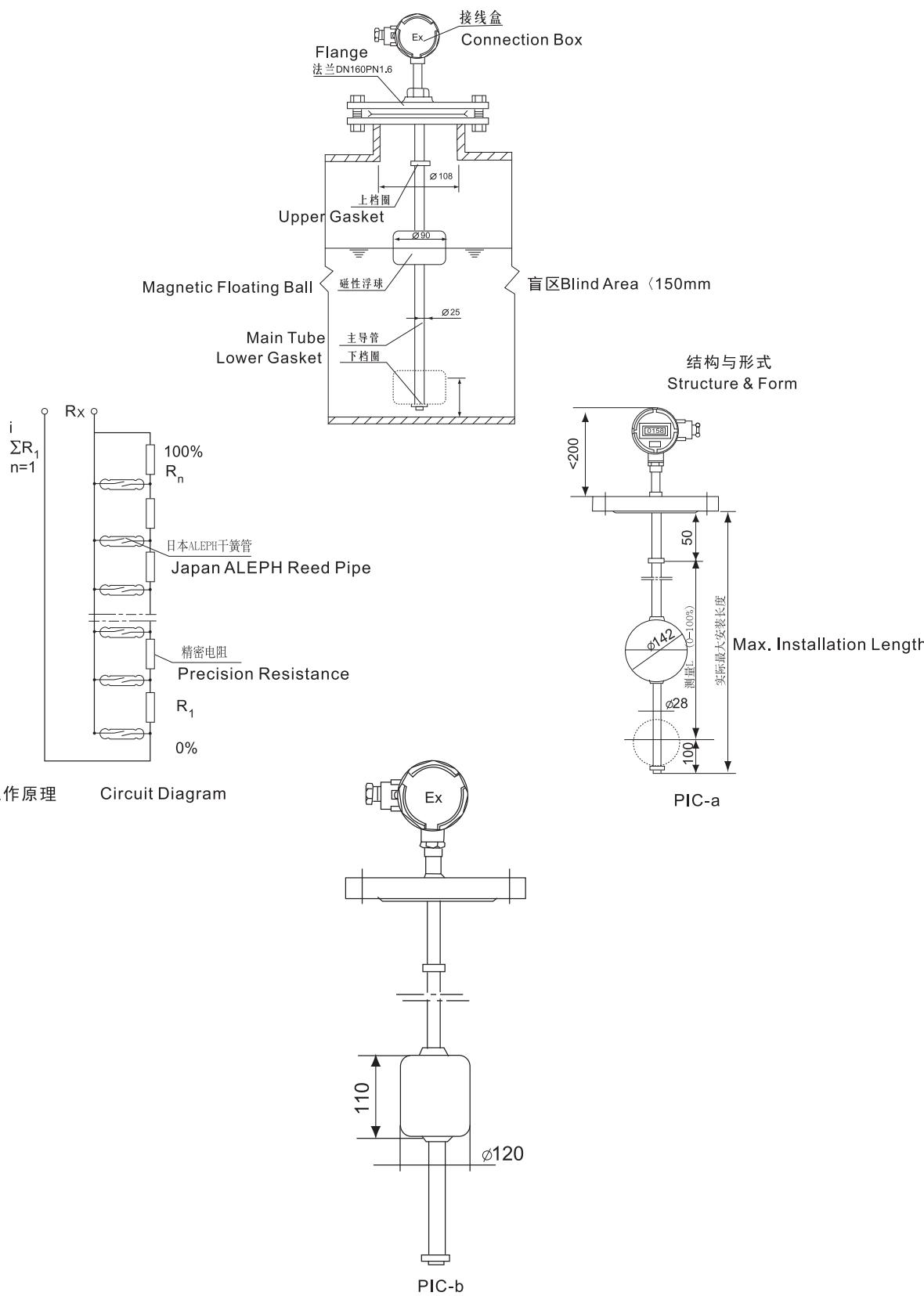
UHZ-50/S liquid level transmitter is widely used in industries like chemical engineering, electricity, papermaking, shipbuilding, environmental protection and food, the liquid level measurement inside the pressure-bearing container as well as the liquid level measurement of underground tanks, pools and high-rise water tanks, so it is easier, more reliable and ideal. The material of UHZ-50/S floater liquid level transmitter is stainless steel, which is corrosion resistant, applicable to flammable and combustible sites.

Principle

Inside the main tube of UHZ-50/S liquid level transmitter, there is a group of reed switch and precision resistance. When the floater with annular magnetic steel outside the tube changes up and down along with the liquid level, correspondingly, under the function of magnetic field, the reed switch at the liquid level inside the main tube will close successively to change the loop resistance value, which will be converted into current output through exclusive module.

三、结构与形式

Structure and Form



四、技术参数

- 1、测量范围：0~6000mm；
- 2、远传精度： $\pm 1.5\%$ ($L \geq 1000\text{mm}$)， $\pm 2.5\%$ ($L \leq 1000\text{mm}$)；
- 3、变送器电源：24VDC 4~20mA (二线制) 输出；
- 4、介质温度：-10°C~ + 80°C；
- 5、介质密度： $\geq 0.5\text{g/cm}^3$ ；
- 6、工作压力： $< 2.5\text{MPa}$ ；
- 7、现场指示精度： $\pm 2.5\%$ F.S；
- 8、防护等级：IP65；
- 9、防爆等级：隔爆型ExdII BT4-6，本安型ExiaCT4-6。

Technical Parameters

1. Measurement range: 0—6000mm
2. Teletransmission accuracy: $\pm 1.5\%$ ($L \geq 1000\text{mm}$)
3. Transmitter power: 24VDC 4-20mA (Two-wire system) output
4. Medium temperature: -10°C — + 80°C
5. Medium density: $\geq 0.5\text{g/cm}^3$
6. Operating pressure: $< 2.5\text{MPa}$
7. Site indication precision: $\pm 2.5\%$ F.S
8. Protection level: Ip65
9. Explosive-proof grade: Flame-proof type ExdII BT4-6|Intrinsic safety type ExiaCT4-6

五、特点

- 1、结构简单，可靠性高；
- 2、进口磁簧开关，使用寿命长；
- 3、适用于敞口或带压容器；
- 4、可用于液位或介面的测量与控制；
- 5、多种触液材质，适用于强腐蚀性液体；
- 6、开关控制器提供多种控制方案；
- 7、具有防爆性能，可用于危险场合；
- 8、多种安装形式可供选择。

Features

1. Simple structure, high reliability
2. Imported magnetic switch, long service life
3. Applicable to open or pressure vessel
4. Available for the measurement and control of liquid level or interface
5. Multiple fluid contacting materials, applicable to liquid with strong corrosivity
6. Multiple control plans for on-off controllers
7. Anti-explosion is available for dangerous occasions
8. Multiple available installation forms

UHZ-50/S系列浮球液位计订购信息

Order Information of TKUHZ-50/S Floater Liquid Level Meter

UHZ-50/S										
安装方式 Installation method										
顶装 Top installation	A									
其他安装方式 Other installation methods	Z									
触液材质 Fluid contacting materials										
304	1									
316L	2									
304+PTFE	3									
316+PTFE	4									
其他特殊材质 Other special materials	Z									
过程连接 Process connection										
无固定装置 No fixed device	O									
固定法兰 Fixed flange	法兰标准 Flange standard									
固定螺纹 Fixed thread	螺纹规格 Thread specification									
安装支架 Installing support	J									
其他 Others	Z									
数字显示表头 Digital display header										
无显示 No display	B0									
液晶显示 Liquid crystal display	B1									
数码显示 Digital display	B2									
接线盒形式 Junction box form										
普通型 Ordinary type	S									
隔爆ExdⅡBT4-6 Explosive-proof ExdⅡBT4-6	D									
本安ExaⅡCT4-6 Explosive-proof ExdⅡBT4-6	E									
测量范围 Measurement range										
插 深 Inserting depth										
工作压力 Operating pressure										
工作温度 Operating temperature										
介质密度 Medium density										

UHZ-50-UB系列液位远传变送器

UHZ-50-UB Liquid Level Teletransmission Transmitter

本产品也可以与磁翻板液位计配套使用时，作远传变送器功能。将磁性系统耦合过来的液位信号作用于传感器内的电阻链上的每一个干簧管，引起输出电阻连续变化，从而引起测量电压的连续变化，此电压与罐体液位成正比，通过变送转换器，输出二线制4~20mA模拟信号，也可以带现场显示和HART通讯协议。

This product can be matched with magnetic liquid level meter as a telecommunication transmitter. Make the liquid level signal coupled by the magnetic system work on every reed switch inside the sensor to arouse continuous changes of the output resistance, thus causing continuous changes of measuring voltage. This voltage is in direct proportion to the tank's liquid level. Through transmission converter, output the two-wire system 4-20mA analog signal, which can also be equipped with status display and HART communication protocol.

UHZ-50-UB						
安装方式 Installation method						
顶装 Top installation	A					
底装 Bottom installation	B					
探杆材质 Probe material						
304	1					
其他特殊材质 Other special materials	Z					
数字显示表头 Digital display header						
无显示 No display		B0				
液晶显示 Liquid crystal display		B1				
数码显示 Digital display		B2				
接线盒形式 Junction box form						
普通型 Ordinary type			S			
隔爆ExdⅡBT4-6 Explosive-proof ExdⅡBT4-6			D			
本安ExaⅡCT4-6 Explosive-proof ExdⅡBT4-6			E			
测量范围 Measurement range						
工作温度 Operating temperature						

注：UHZ-50/S-UB系列只产远传部分时选型用。

Note: UHZ-50/S-UB can only be used for the model selection of teletransmission.

UHZ-50/S-U_B系列磁性浮球控制器

UHZ-50/S-U_B Magnetic Floater Controller

一、概述

UHZ-50/S系列液位变送器的主导管内装有一组干簧管和精密电阻，当管外带有环形磁钢的浮球随液位上下变化，相应在主导管内位于液面处的干簧管在磁场作用下依次闭合使回路电阻值发生变化，经专用模块转换成电流输出。

二、特点

1. 结构简单安装方便，易维护；
2. 使用范围广，适用多种介质的液位控制；
3. 重复精度高；
4. 耐腐蚀性强；
5. 特殊要求可定制。

三、结构原理

利用磁性浮球随液位升降使处在主导管内设定位置的干簧管开关动作发出接点开关信号。

Overview

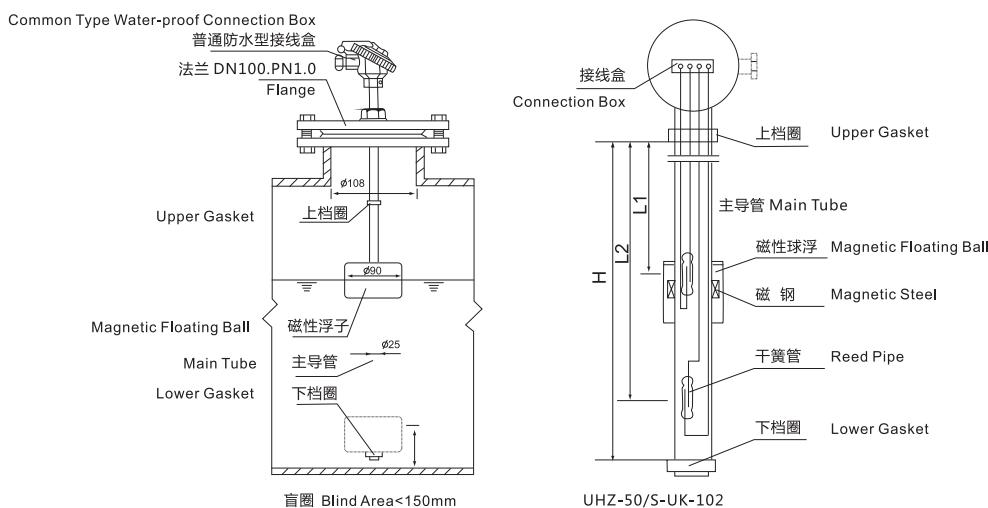
Inside the main tube of UHZ-50/S liquid level transmitter, there is a group of reed switch and precision resistance. When the floater with annular magnetic steel outside the tube changes up and down along with the liquid level, correspondingly, under the function of magnetic field, the reed switch at the liquid level inside the main tube will close successively to change the loop resistance value, which will be converted into current output through exclusive module.

Features

1. Simple structure, easy installation and maintenance
2. Wide range of usage, applicable to the liquid level control of multiple media
3. High repeated accuracy
4. Strong corrosion resistance
5. Customized according to special requirements

Structure Principle

The magnetic floater rises and falls with the liquid level, which drives the on-off action of the reed switch at the set position inside the main tube to send out connection switching signals.



结构原理图 Structure & Theory

四、技术参数

1. 公称长度：70~3000mm；
2. 测量误差：±10mm；
3. 触点容量：220VA.C/A (阻性)；
4. 防爆等级：Exid II CT6；
5. 介质比重：> 0.55g/cm³；
6. 工作压力：1.0、1.6、2.5；
7. 工作温度：0°C~+80°C；
8. 介质粘度：≤0.4Pa.S。

Technical Parameters

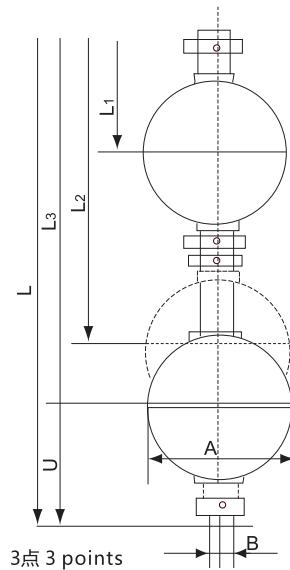
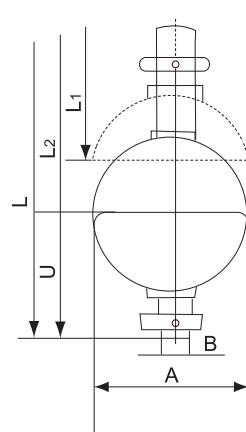
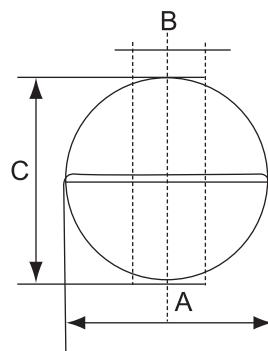
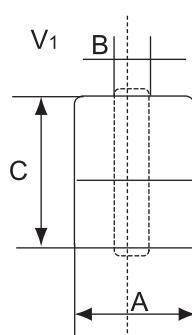
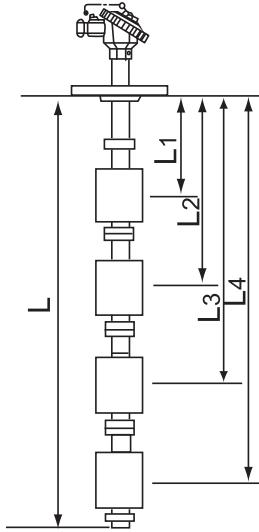
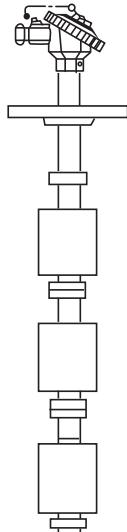
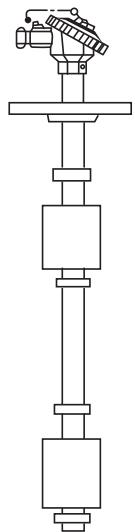
1. Nominal length: 70~3000mm
2. Measure error: ±10mm 24VDC 0.5A
3. Contact capacity: 220VA.C/A9(resistive)24VDC 0.5A
4. Explosive-proof grade: Exid II CT6
5. Medium proportion: >0.55g/cm³
6. Operating pressure: 1.0~1.6~2.5
7. Operating temperature: 0°C~+80°C
8. Medium viscosity: ≤0.4Pa.S

五、产品结构

因客户需求的控制方式不同，其控制器的结构也有所不同。

Product Structure

According to customers' different needs of control modes, the structures of the controllers are different.



结构形式 Structures (Flange Connection)

UHZ-50/S- U_B 系列磁性浮球控制器订购信息Order Information of UHZ-50/S- U_B Magnetic Floater Controller

UHZ-50/S- U_B											
安装方式 Installation method 顶装 Top installation 其他安装方式 Other installation methods		A Z									
触液材质 Fluid contacting materials 304 316L 304+PTFE 316+PTFE 其他特殊材质 Other special materials		1 2 3 4 Z									
过程连接 Process connection 无固定装置 No fixed device 固定法兰 Fixed flange 固定螺纹 Fixed thread 安装支架 Installing support 其他 Others		O 法兰标准 Flange standard 螺纹规格 Thread specification J Z									
接线盒形式 Junction box form 普通型 Ordinary type 隔爆ExdIIBT4-6 Explosive-proof ExdIIBT4-6 本安ExaIICT4-6 Explosive-proof ExdIICT4-6		S D E									
插深 Inserting depth											
控制点数 Control point figures 1个浮球1个控制点 1 floater 1 control points 1个浮球2个控制点 1 floater 2 control points 2个浮球2个控制点 2 floaters 2 control points 3个浮球3个控制点 3 floaters 3 control points 4个浮球4个控制点 4 floaters 4 control points 其他 others											
测量范围 Measurement range											
控制高度及方式 (从过程连接处为基准) Control height and method (with the standard of the process joint) 高度mm+常开 (K) 或常闭 (B) Control height and method (with the standard of the process joint)											
工作压力 Operating pressure											
工作温度 Operating temperature											
介质密度 Medium density											

ZHTKWL-130系列磁致伸缩液位计

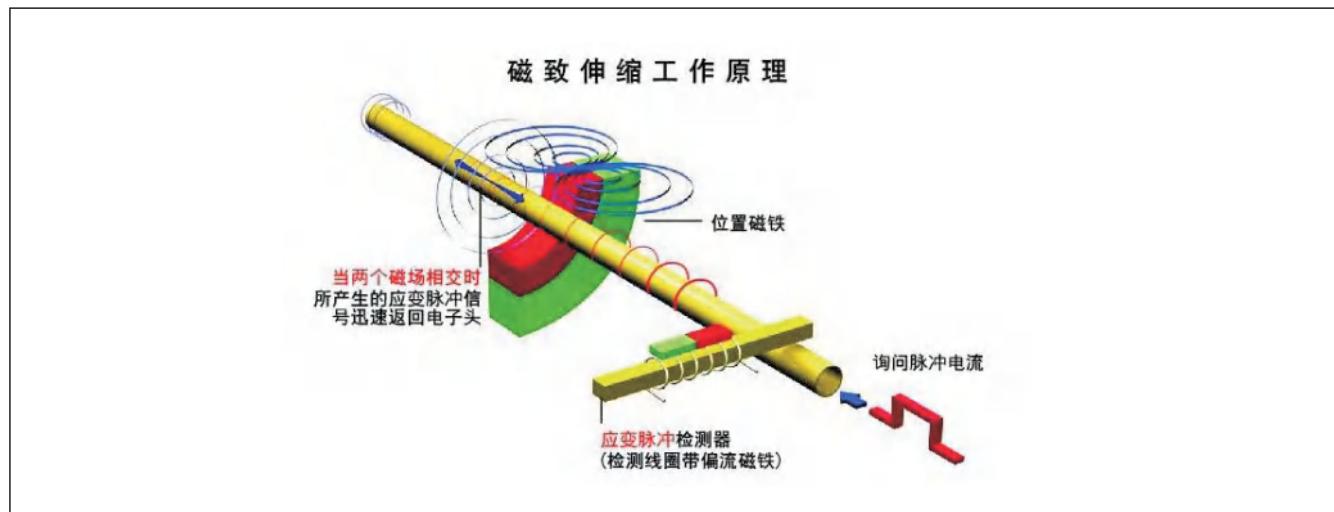
ZHTKWL-130 Magnetostriction Liquid Level Meter

一、工作原理

磁致伸缩液位计的传感器工作时，传感器的电路部分将在波导丝上激励出脉冲电流，该电流沿波导丝传播时会在波导丝的周围产生脉冲电流磁场。在磁致伸缩液位计的传感器测杆外配有一浮子，此浮子可以沿测杆随液位的变化而上下移动。在浮子内部有一组永久磁环。当脉冲电流磁场与浮子产生的磁环磁场相遇时，浮子周围的磁场发生改变从而使得由磁致伸缩材料做成的波导丝在浮子所在的位置产生一个扭转波脉冲，这个脉冲以固定的速度沿波导丝传回并由检出机构检出。通过测量脉冲电流与扭转波的时间差可以精确地确定浮子所在的位置，即液面的位置。

Overview

When the sensor of the magnetostriction liquid level meter works, the circuit of the sensor will stimulate the pulse current on the waveguide wire, which will produce pulse current magnetic field around along the waveguide wire. Outside the sensor's measuring bar is equipped with a floater, which can move up and down along with the changes of the liquid level. Inside the floater there is a group of permanent magnetic ring. When the pulse current magnetic field meets with the magnet ring's magnetic field produced by the floater, the magnetic field around the floater will change, thus making the waveguide wire made out of magnetostriction materials produce a torsional wave pulse in the position of the floater. This pulse returns at fixed speed along the waveguide wire and is detected by the detection institution. By measuring the time difference between the pulse current and the torsional wave, we can accurately confirm the position of the floater, i.e. the position of the liquid level.



二、特点

- 非接触式测量；
- 高精度、高稳定性、高可靠性；
- 使用寿命长；
- 多种信号输出方式选择；
- 具有反向极性保护功能；
- 防雷击、防射频干扰；
- 结构精巧、环境适应性强；
- 不需定期重标和维护；
- 可监测带压或不带压液罐的液位；
- 隔爆、防腐（可选）；
- 安装方便。

Features

- Non-contact measurement
- High accuracy, high stability, high reliability
- Long service life
- Multiple signal output mode selection
- Reversed polarity defensive function
- Lightning protection and anti-radio-frequency interference
- Exquisite structure, strong environmental adaptation
- No need of regular rescaling and maintenance
- Able to monitor the liquid level of pressure or non-pressure fluid tanks
- Explosive-proof and corrosion prevention (optional)
- Easy installation

三、应用范围

- 工业现场液位测量与控制；
- 油罐液位测量；
- 食品饮料液罐控制；
- 大坝水位监控；
- 化工过程液位控制；
- 制药罐液位控制；
- 饮用水和污水处理等。

Application scope

- Liquid level measurement and control on the industrial fields
- Liquid level measurement of oil tanks
- Control of food and beverage containers
- Water level monitoring of dams
- Liquid level control of chemical process
- Liquid level control of pharmaceutical tanks
- Drinking water and wastewater treatment

四、技术参数

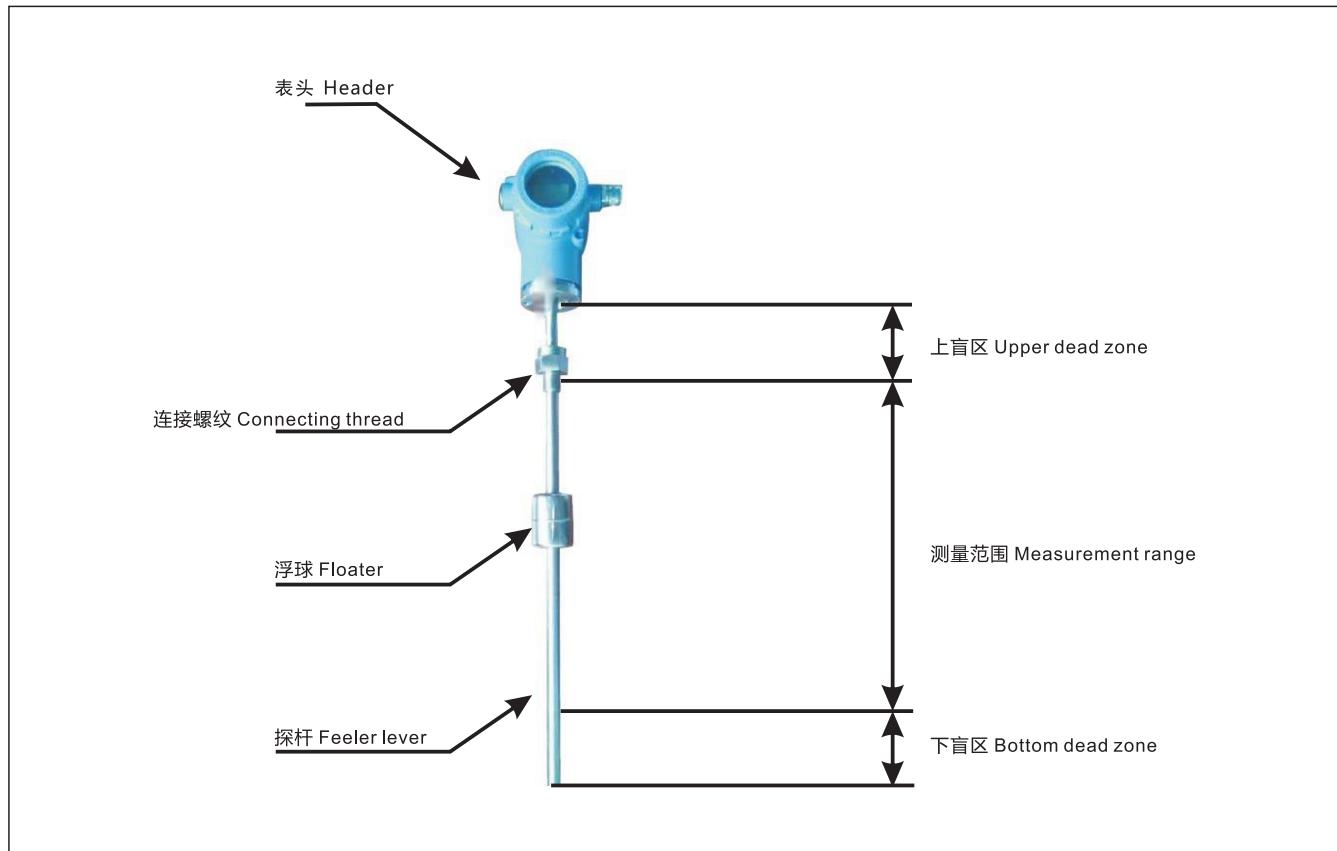
供电电源：24V±2.4V.DC；
工作温度：-40~160°C；
量程范围：用户定制80~6000mm量程范围内产品；
输出形式：4~20mA；
线性误差：±0.05%FS，最高精度1mm。

Technical parameters

Power supply: 24V±2.4V.DC
Operating temperature: -40-160°C
Range ability: Users' customized products within the range of 80-6000mm
Output form: 4-20mA
Linear error: ±0.05%FS, highest accuracy 1mm

五、产品结构

Product structure



ZHTKWL-130系列磁致伸缩液位计订购信息
Order Information of ZHTKWL-130 Magnetostriction Liquid Level Meter

ZHTKWL-130										
安装方式 Installation method										
顶装 Top installation		A								
侧装 Side installation		B								
其他安装方式 Other installation methods		Z								
触液材质 Fluid contacting materials										
304 316L 304+PTFE 316+PTFE 其他特殊材质 Other special materials		1 2 3 4 Z								
过程连接 Process connection										
无固定装置 No fixed device		O								
固定法兰 Fixed flange			法兰标准 Flange standard							
固定螺纹 Fixed thread			螺纹规格 Thread specification							
其他 Others		Z								
数字显示表头 Digital display header										
无显示 No display			B0							
液晶显示 Liquid crystal display			B1							
接线盒形式 Junction box form										
普通型 Ordinary type			S							
隔爆ExdIIBT4-6 Explosive-proof ExdIIBT4-6			D							
本安ExaIICT4-6 Explosive-proof ExdIICT4-6			E							
测量范围 Measurement range										
插深 Inserting depth										
工作压力 Operating pressure										
工作温度 Operating temperature										
介质密度 Medium density										

注：产品标配HART通信，4~20mA输出，如需其他通信方式或输入，订货前请说明。
 Note: The product's standard configuration is HART communication and 4-20mA output.
 If other communication modes or inputs are needed, please illustrate before ordering.