

UHZ-50/D 型系列顶装式磁性浮球液位计

UHZ-50/D Type Series of Top-mounted Magnetic Floating Ball Liquid Level Indicator



功能与适用范围

UHZ-50/D 系列顶装式磁性浮球液位计是以浮球组件为测量元件，通过液体浮力作用，使浮球上下移动，带动顶杆上端的磁钢上下变化，经磁性耦合作用，使显示器组件的磁性翻柱翻转达到跟踪液体液位变化，故显示醒目，读数直观，因显示器组件与被测介质完全隔离，故使用安全可靠。该液位计适于各种地下槽池等容器，以及不宜侧面开孔的容器的液位显示，如配上配套仪表可用于远传检测，以实现自动控制功能。

工作原理与特点

工作原理：

根据浮力原理和磁性耦合原理而制成的，当被测容器内的液位上下变化时带动浮球，并通过与之相连的连杆上端的永久磁钢上下移动，经磁性耦合而使显示器中的翻柱翻转。当液位上升翻柱由白色转为红色，当液位下降时翻柱由红色转为白色，红白界位处就为容器内介质液位的实际高度，从而实现液位自动跟踪显示。



Function & Application Range

Floating ball part is the measuring element of UHZ-50/D type series of top-mounted magnetic floating ball liquid level indicator. With buoyancy effect, floating ball moves up and down that results in move of magnet steel at the upper end of top rod. With magnetic coupling effect, it leads to revival of magnetic revival pillar of displayer part. Thus, the change of liquid level could be followed with direct and eye-catching display. It is safe and reliable with separation of displaying part from tested medium.

The indicator is suitable for measuring the liquid level in trough and pool underground, and container on which it is not appropriate to open hole. In connection with attached instruments, it could be used for long-range measuring and transmission. Thus, automatic control could be realized.

Working Theory & Features

Working Theory

It is made based on buoyancy and magnetic coupling theory. The liquid level change of tested medium in container results in move of floating ball. It leads to revival of revival pillar of displayer through move of permanent magnet steel on top end of rod connected with it. When liquid level rises, revival pillar turns from white to red, when it falls, the pillar turns from red to white. The demarcation line between red and white indicates the actual level of the medium inside container. Thus, it could be realized to automatically follow and display the liquid level.

特点：

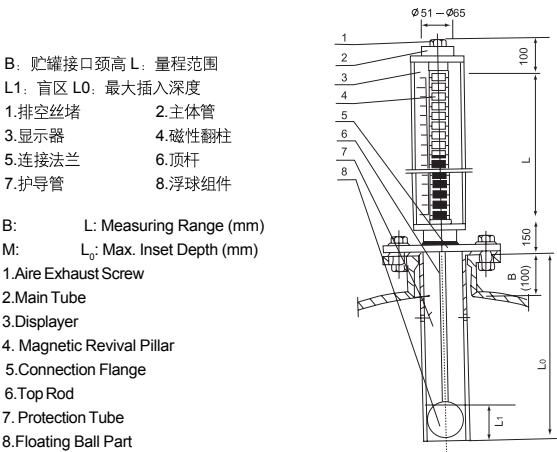
- (1) 在容器不适宜侧面开孔及容器周围空间很少时，可在容器上部或下部安装本形式的液位计
- (2) 适用于粘度较大的液体介质。
- (3) 显示器的观察方向可任意改变。
- (4) 其他特点和 UHZ-50/C 相同。

特点技术参数

- 1.测量精度 $\pm 10\text{mm}$ 。
- 2.工作压力 $\leq 2.5\text{Mpa}$
- 3.介质密度 $\geq 0.5\text{g/cm}^3$
- 4.工作温度 $0^{\circ}\text{C}\sim 200^{\circ}\text{C}$
- 5.测量范围：500~5000mm
- 6.介质粘度： $\leq 0.4\text{Pa.S}$
- 7.本厂出厂连接法兰尺寸：DN150PN1.6
- 8.连接法兰：采用化工部 HG20592-20635-97 法兰标准，若采用其他标准，请用户在订货时注明。法兰连接孔分布形状：正方形。

顶装式磁性浮子液位计的盲区（图四中的 L1）

因测量时在结构上存在一定的盲区值，读数时要补偿，对不同的介质密度，浮球的长度是不一样的，故盲区值也不一样。见表四（仅供参考）



图四 UHZ-50/D Figure 4 UHZ-50/D

产品选型标记

选型举例：

测量地下油罐的油位，介质为0#柴油，密度为0.8g/cm³采用护套式顶装液位计，配远传仪表，上接线盒4-20mA 工作温度为常温，工作压力为0.8MPa，测量范围1500 不锈钢材质，连接法兰为活套法兰。

选型标记：

UHZ-50/D₁E2T-10-1500-0.8-0-0.8

Features:

- (1) The indicator could be mounted on top or bottom of container if it is unsuitable to open hole on the side or that space around container is not enough.
- (2) The indicator is suitable for media with high viscosity.
- (3) The observation direction of displayer may be changed freely.
- (4) Other features remain the same as those of UHZ-50/C

Technical Parameters:

- 1.Measuring Accuracy : $\pm 10\text{mm}$.
- 2.Working Pressure : $\leq 2.5\text{Mpa}$
- 3. Medium Density: $\geq 0.5\text{g/cm}^3$
- 4. Working Temperature: $0^{\circ}\text{C}\sim 200^{\circ}\text{C}$
- 5. Measuring Range: 500~5000mm
- 6. Medium Viscosity: $\leq 0.4\text{Pa.S}$
- 7. Manufacturer Flange Size: DN150PN1.6
- 8. Connection Flange: We generally adopt connection flange stipulated in HG20592-20635-97 standard issued in 1998 by Ministry of Chemical Industry. It should be indicated in ordering for demand on other type flange. Flange connection distribution figure: square

Blind Area of the Indicator (L1 in Figure 4)

The reading needs compensation due to blind area of its structure. For media with different density, the length of floating ball remains different. So the blind area is also different. See Form 4 (for reference only)

Form 4	
盲区 L1 Blind Area L1 (mm)	介质密度 Medium Density g/cm ³
650	0.45~0.60
400	0.61~0.74
380	0.75~0.85
350	0.86~1.10
330	1.11~1.25
300	1.26~1.39
250	1.40~1.59
200	1.60~2.00

Type Selection Example

Type Example

The indicator of stainless steel material with sleeve connection flange, 4~20mA upper wire connection box and long-range transmitter is used to measure liquid level of 0# diesel oil (density 0.8g/cm³) in oil tank underground under normal temperature and pressure of 0.8Mpa within range of 1500mm.

Type Selection:

UHZ-50/D₁ E2T-10-1500-0.8-0-0.8

产品系列代号 Product Code		UHZ-50/D 型磁性浮球液位计 UHZ-50/D Type Magnetic Floating Ball Liquid Level Indicator									
系列型号 Serial Code	D1					D2					
	基本型 Basic Type					防腐型 Corrosion-proof Type					
结构型式 Structure Type	W					E		P			
	无护套管式 (适用高粘度介质) Without sleeve tube (suitable with medium of high viscosity)					有护套管式 With sleeve tube		旁通管式 Side connection tube			
主体材质 Main Body Material	1	1Cr18Ni9Ti (连接法兰为碳钢)(Carbonized steel for connection flange)									
	2	全(Whole)1Cr18Ni9Ti									
	3	316									
	4	316L									
	5	PVC				适用防腐型					
	6	PP				Suitable with corrosion-proof type					
连接法兰型式 Connection Flange Type	G					Y		T			
	平焊法兰 Horizontal welded flange					凸面法兰 Convex flange		活套法兰 Sleeve flange			
0 光显示. 无配套仪表 Light display, without attached instrument 1 上接线盒式配 U_R 变送器 Upper Connection Box with U_R Transmitter Attached 2 下接线盒式配 U_R 变送器 Lower Connection Box with U_R Transmitter Attached 3 上接线盒式配 U_B 变送器 Upper Connection Box with U_B Transmitter Attached 4 下接线盒式配 U_B 变送器 Lower Connection Box with U_B Transmitter Attached 5 上接线盒式配 U_K 控制器 Upper Connection Box with U_K Transmitter Attached 6 下接线盒式配 U_K 控制器 Lower Connection Box with U_K Transmitter Attached 配套仪表 与安装型 式 Instru- ments At- tached & Installation Type											
O 无接线盒 Without wire connection box S 普通防水型 Common water-proof type D 隔爆 EXd II BT4~6 Explosion-isolated EXd II BT4~6 E 本安 Exia II CT4~6 Intrinsic safety Exia II CT4~6					Without wire connection box Common water-proof type Explosion-isolated EXd II BT4~6 Intrinsic safety Exia II CT4~6		接线盒型式 Wire Connection Box Type				
测量范围 Measuring Range (mm)											
D 开口容器 Container with open mouth □ 工作压力 Working Pressure					工作压力 MPa Working Pressure MPa						
工作温度 °C Working Temperature °C											
介质密度 g/cm ³ Medium Density g/cm ³											

UHZ-50/D	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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选用须知

- 1.防腐型公称压力≤ 1.0MPa
- 2.液位计有一定盲区，故在读取液位高度时应加上盲区值补偿（本厂液位计出厂时，标尺刻度零位已迁移到实际值）
- 3.液位计测量范围不超过5米，否则影响液位计的稳定可靠，牢度等。
- 4.安装连接法兰，本液位计出厂的常用突面尺寸参考（HG21592-97）制造。

安装使用和维护

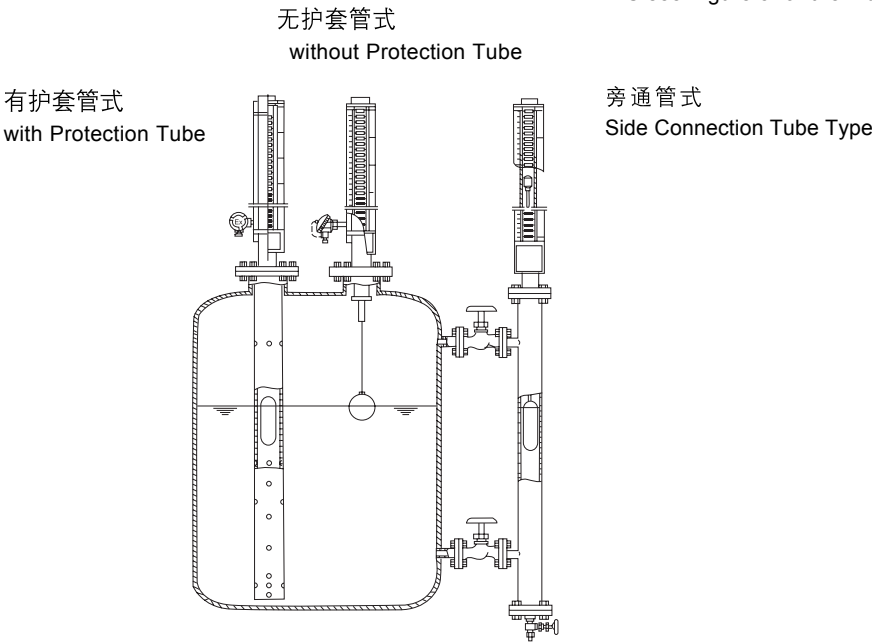
- 1.液位计护导管和主体导管必须保持垂直
- 2.连杆不能弯曲，必须挺直插入。
- 3.安装完毕后，需对显示器的翻柱用磁钢引导一次使零位以上显示为白色，零位以下显示为红色。
- 4.结构形式如图五所示

Notices in Selection

- 1.Nominal pressure of corrosion-proof type ≤ 1.0MPa
- 2.The reading needs compensation due to existence of blind area of the indicator. (It is zeroed in at the actual value before delivery.)
- 3.The measuring range is within 5 meters. Otherwise stability, reliability or strength of the indicator would be affected.
- 4.The flange is made with reference to HG21592-97 for the sizes.

Installation, Usage & Maintenance

- 1.Protection tube and main tube of the indicator must be kept erect.
- 2.Connection rod could not be bent and must be insert erectly.
- 3.After installation completion, revival pillar should be attracted with magnet steel resulting in that part above zero shows white while that below zero shows red.
- 4.PLS see Figure 5 for the indicator structure.



图五安装结构形式 Figure 5 Installation Structure Figure

订货须知

- 1. 型号规格配套仪表
- 2. 测量范围
- 3. 被测介质名称及密度
- 4. 工作压力
- 5. 工作温度
- 6. 材质要求
- 7. 法兰标准及连接形式

Notices for Order

- 1.Type, Specification & Attached Instrument
- 2. Measuring Range
- 3. Name & Specification of Tested Medium
- 4. Working Pressure
- 5. Working Temperature
- 6. Material Requirement
- 7. Flange Standard & Connection