

## WD-TPS-400系列静压(投入)式液位计

### WD-TPS-400 SERIES STATIC PRESSURE LIQUID LEVEL TRANSMITTER

#### 概述 Introduction

TPS-400系列静压(投入)式液位计是采用最新的干式陶瓷传感器开发组装的新型液位计,它具有技术先进、精度高、体积小、安装和使用方便等特点,被广泛地应用于城市给排水、水处理行业及电力、石化等行业的水位测量。由于该液位计输出4~20mA标准二线制电流信号,可方便地与上位机、PLC及各类显示仪表配套,实现液位的远距离实时检测和控制在。

TPS-400 series static pressure transmitters adopt new dry ceramic transducers. Advancing in technology, precise in measure, small dimension, convenient to install and use, it is widely used for level measuring in city water-dealing, electronic power, petroleum. Transmitter outputs a two-wire 4~20mA standard current signal is convenient to match PLC and series display instrument, achieve long-distance measuring and controlling.



#### 技术参数

- 测量范围Measuring range: 0~30 m
- 输出信号Output: 4~20mADC二线制
- 精确度Accuracy: 0.2级
- 介质温度Medium temperature: -40~100℃
- 环境温度Ambient temperature: -30~80℃
- 环境温度影响Temperature influence:  
在温度补偿范围内in temperature compensation range,  
零位变化量zero change  $\leq \pm 0.3\%/10^\circ\text{C}$   
量程变化量span change  $\leq \pm 0.2\%/10^\circ\text{C}$
- 电源电压Power: 12V~45VDC, 标准为24VDC
- 电源电压影响Power influence:  
在规定的电压范围内输出变化量in stated voltage range,  
output change:  $< 0.01\%/1\text{V}$
- 射频干扰影响Electromagnetic radiation influence:  
当变送器正常安装及罩壳盖紧时, 对射频率为  
27~1000MHz之间和场强为30V/m, 输出变化量 $< 0.1\%$   
When transmitter mounted normally and cover closed,  
output change $< 0.1\%$  at frequency 27~1000MHz and  
strength 30V/m
- 长期稳定性Stability:  $\leq \pm 0.3\%$  (6个月)
- 防爆标准Explosion proof classification:  
本安型intrinsically safe type: Ex ia II CT4~CT6  
隔爆型explosion proof type: Ex d II CT4~CT6
- 外壳防护等级Enclosure classification: IP65

#### 工作原理 Operating principle

TPS系列静压式液位计是通过测量液体的液位高度而产生的静压力来测定液体液位的。当把液位变送器的传感器部分投入到液体介质中时,传感器把液体的静压转换为电压信号,该电压信号经放大后转化成4~20mADC标准信号输出。

TPS series static pressure liquid level transmitter measure liquid level by hydrostatic head related to liquid level. When the transducer unit is dived into liquid, the static pressure is converted into voltage signal, then amplified into 4~20mADC standard current output.

液体中某一点的静压力与该点到液面的距离成正比, 即:  $P = \rho gh$

其中P——被测点压力(压强)

$\rho$  —— 介质密度

$g$  —— 重力加速度

$h$  —— 被测点到液面的高度

对已确定的被测介质及地点,  $\rho$ 、 $g$ 为常数, 故被测点到液面位置的变化只与被测点的压力(压强)有关。TPS系列静压(投入)式液位计就是通过测定被测点的静压力来确定液面位置的。

型号规格表 Model and spec

WDTPS-400		静压式液位变送器 static pressure liquid level transmitter				
A	通用型, 适用于水、污水、海水等弱腐蚀性液体介质 Common type: suitable for water, sewage, seawater etc. slight corrosive medium 接液材质: 氧化铝陶瓷、PVC、316L, 密封件: 氟橡胶 Contacting liquid material: alumina ceramic, PVC, 316L. sealing: fluorine rubber					
	耐油型, 适用于汽油、轻油、重油及其它有机溶液 Oil resistant type: suitable for gasoline, light oil, heavy oil and other organic solution 接液材质: 氧化铝陶瓷、316L, 密封件: 丁腈耐油橡胶 Contacting liquid material: alumina ceramic, 316L. sealing unit: nitrile-butadiene rubber					
	耐酸碱型, 适用于盐酸、稀硫酸、浓硫酸等无机溶液 Acid and alkali resistant type: suitable for hydrochloric acid, dilute vitriol, oil of vitriol etc. inorganic solution 接液材质: 氧化铝陶瓷、聚四氟乙稀、PPR, 密封件: 氟橡胶 Contacting liquid material: alumina ceramic, PTFE, PPR. Sealing unit: fluorine rubber					
	食品卫生型, 符合GMP标准和3-A卫生标准 Sanitary type: accordant with GMP standard and 3-A sanitary standard 接液材质: 陶瓷膜片、316L, 密封件: 硅橡胶 Contacting liquid material: alumina ceramic, 316L. sealing unit: silicone rubber					
1	法兰安装型 flange connecting					
2	支架安装型 bracket connecting					
3	卫生型快装卡箍安装型 sanitary rapid snap link connecting					
4	螺纹安装型 screw connecting					
P	普通防水型 ordinary water proof type, 防护等级IP65, 不带现场显示					
D	隔爆型 explosion proof type: Ex d II CT4~CT6					
B	本安型 intrinsically safe type: Ex ia II CT4~CT6					
L	带现场LED发光数字显示 with LED indicating					
T	附加温度变送输出4~20mA(二线制), 0~60℃/0~100℃ appending temperature transmission output					
K	上下限继电器输出 (选现场LED数显表有该功能)					
	<input type="checkbox"/>	导气电缆长度或安装高度 ventilate cable length or installation height				
	<input type="checkbox"/>	测量范围 measuring rang (mm)				
	<input type="checkbox"/>	被测介质密度 specific gravity of measured medium 单位g/cm <sup>3</sup>				
WDTPS-400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## ※选型举例 Example

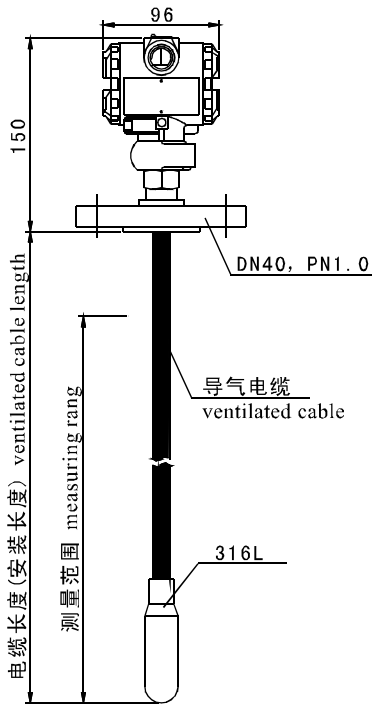
测量介质为水, 密度1.0g/cm<sup>3</sup>, 安装方式为支架安装型, 普通防水结构, 不带现场指示, 水池深度为5000mm, 要求导气电缆长度为7000mm:

其型号为: TPS-400A2P-7000-5000-1.0

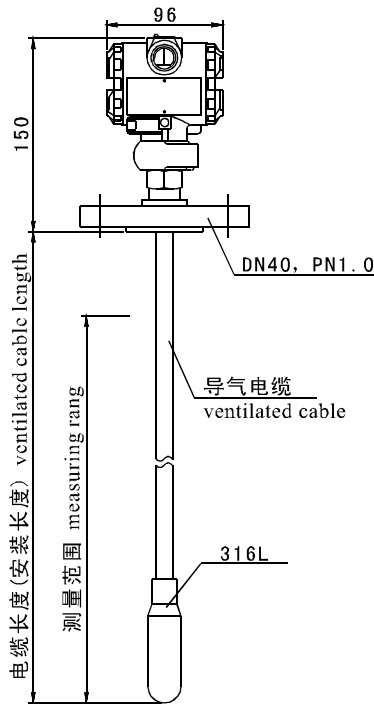
medium is water, density is 1.0g/cm<sup>3</sup> bracket installing, normal water-proof, no local display, tank depth is 5000mm, ventilate cable length is 7000mm.

Model: TPS-400A2P-7000-5000-1.0

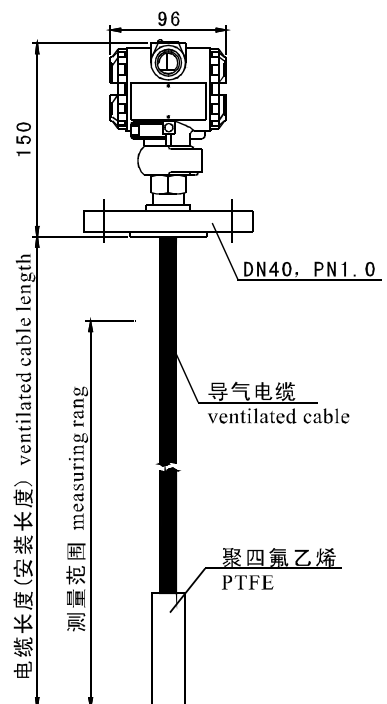
外形和安装尺寸 Dimension and installaton



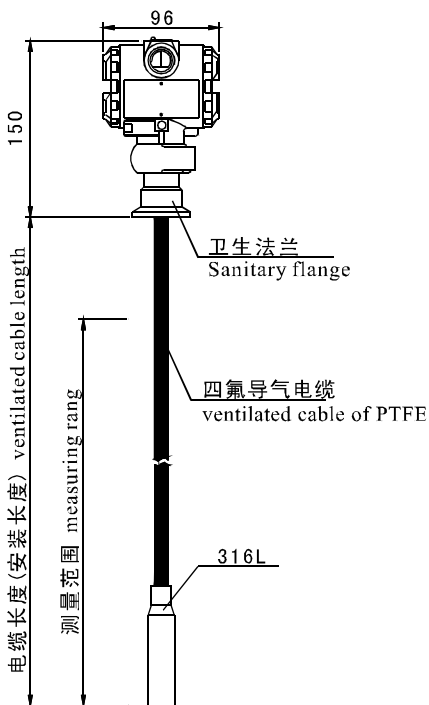
法兰安装 通用型  
flange connecting, common type



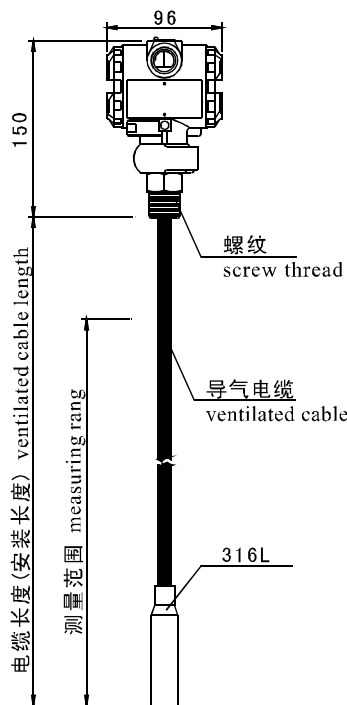
法兰安装 耐油型  
flange connecting, oil resistant type



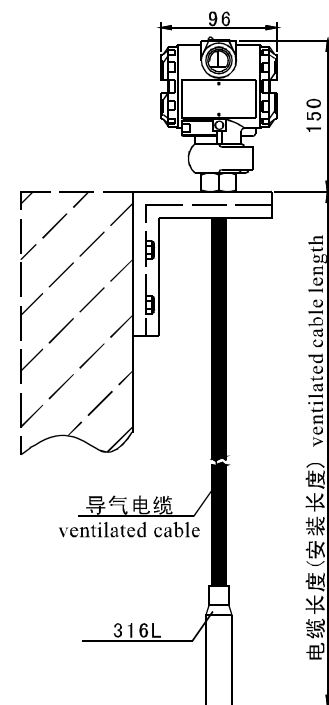
法兰安装 耐酸碱型  
flange connecting, acid and alkali resistant type



卡箍安装 食品卫生型  
clamp connecting, sanitary type



螺纹安装 细径型  
thread connecting, slender type



支架安装 通用型  
bracket connecting, common type