

超声波水表表体

Ultrasonic Cold Water Meter Body

一、概述 OVERVIEW

超声波水表表体是作为超声波水表的信号产生部件，其作用是水表线路提供准确、稳定、持续的超声信号。

我公司根据建设部颁布的《中华人民共和国城镇建设行业标准》（CJT434-2013）及其他相关规程，综合考虑了各地区对水表流量计量的不同需求，设计了满足户用型超声波水表表体，所搭配的流量传感器具有灵敏度高、性能稳定、使用可靠及功耗低等特点。

As the signal generating unit of the ultrasonic cold water meter, the Ultrasonic Cold Water Meter Body is used for supplying accurate, stable and continuous ultrasonic signals to the meter circuit.

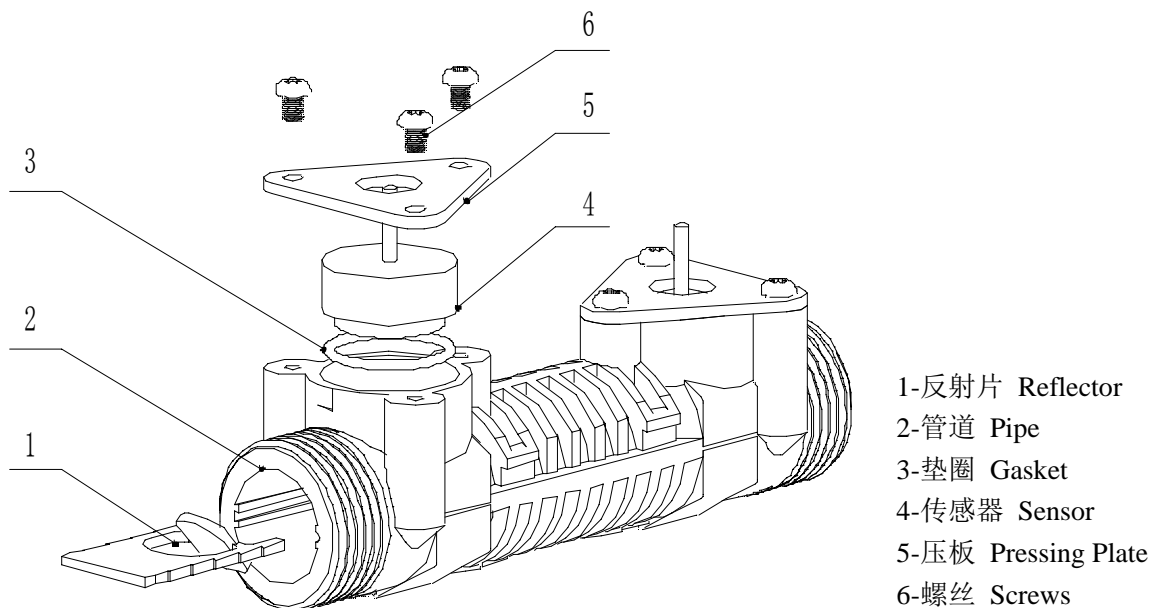
The Ultrasonic Cold Water Meter Body is designed for residential use and conforms to the Urban Construction Industry Standard CJT434-2013 of The PRC, taking into account the water metering needs of different regions. The built-in transducers feature high sensitivity, stable performance, high reliability and low power consumption.

二、结构组成及原理 CONSTRUCTION AND PRINCIPLE

1. 组成结构 (Mechanical construction):

由一对超声波流量传感器、一套管段组件组成。

Constructed by a pair of ultrasonic flow sensors and a set of pipe components.



2. 测量原理 (Measuring principle):

可采用时差法的测量原理, 即通过测量超声波脉冲顺流传播和逆流传播的时间差来进行流量测量的方法。

Measurement may be performed based on the transit time method. By measuring the difference in the downstream and upstream propagation time of ultrasonic pulses, the flow rate of the water in the pipe can be calculated.

三、技术参数 TECHNICAL DATA

1. 产品名称 (Name): **HS0014-000**

2. 产品型号 (Model): **RC15/HS-US0004-000-01**

3. 传感器性能参数 (Electrical characteristics of the built-in sensors):

项目 Item	单位 Unit	标准 Standard	测试条件 Test condition T=25°C
谐振频率 (Fs) Thick Resonant frequency	KHz	975 ± 30	Agilent 4294A
谐振阻抗 (R) Resonant impedance	Ω	≤ 110	Agilent 4294A
静电容量 (Co) Static capacitance	pF	1150 ± 20%	数字电桥 LCR Meter at 1000Hz/1V

4. 基表参数 (Meter body parameters):

项目 Item	单位 Unit	标准 Standard	测试条件 Test condition T=25°C
接收幅值 Received Signal Amplitude	mV	≥ 350	1Vp-p / 20 脉冲 间隔 20ms at 1MHz 1Vp-p / 20 Pulses Interval 20ms at 1MHz
最大输入电压 Maximum Input Voltage	Vp-p	5	At 1MHz
最高允许工作压力 Maximum Allowable Working Pressure	MPa	1.6	
安装长度 L Installation Length	mm	110	游标卡尺 Vernier Caliper

连接螺纹 D Connecting Thread	英制	3/4G	螺纹规 Thread Gauge
工作温度 Operating Temperature	°C	0.1~+50	
储存温度 Storage Temperature	°C	-25~+55	
压力损失 Pressure Loss	KPa	≤40	Q=2.5m ³ /h, T<30°C
安装位置 Installation Position	进水管 Inlet		
安装形式 Installation Mode	管螺纹连接 Threaded connection		

5. 测量精确度 (Accuracy):

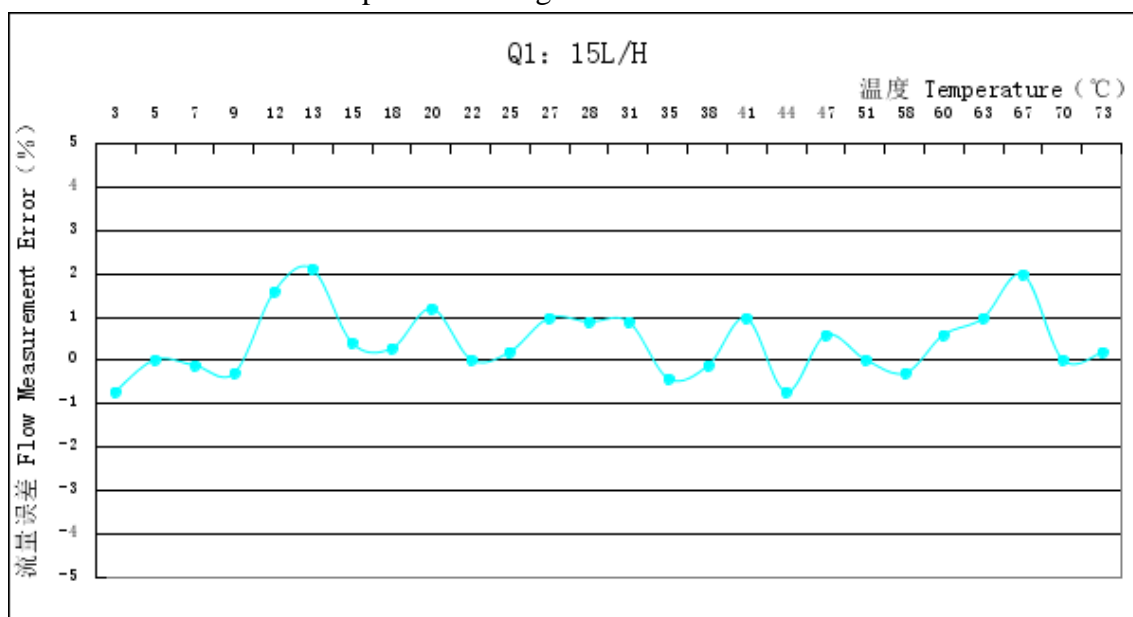
(1)测量精确度:

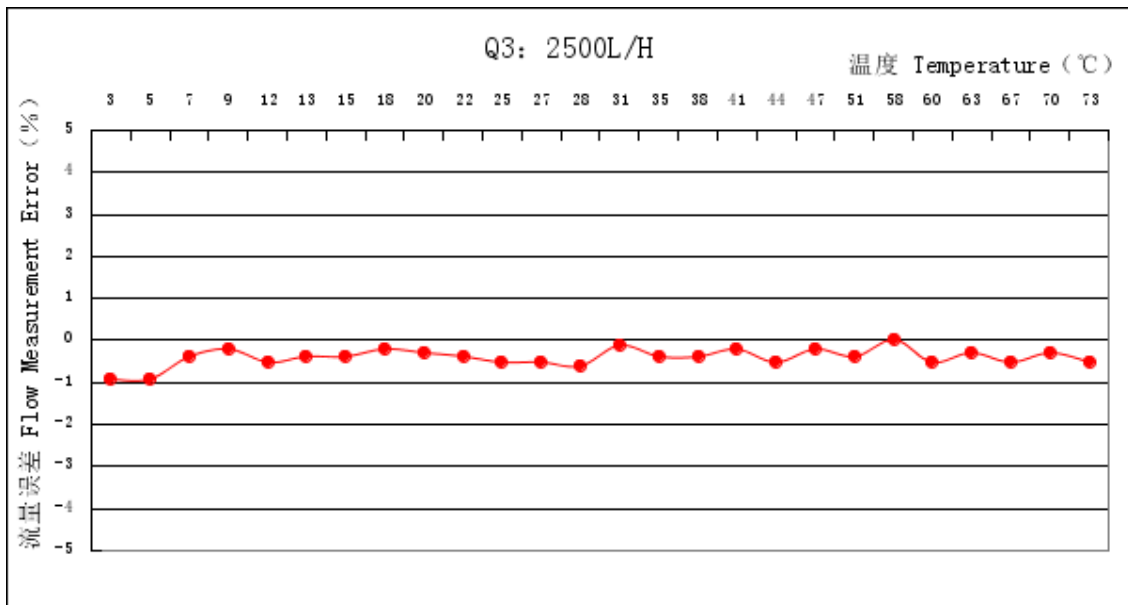
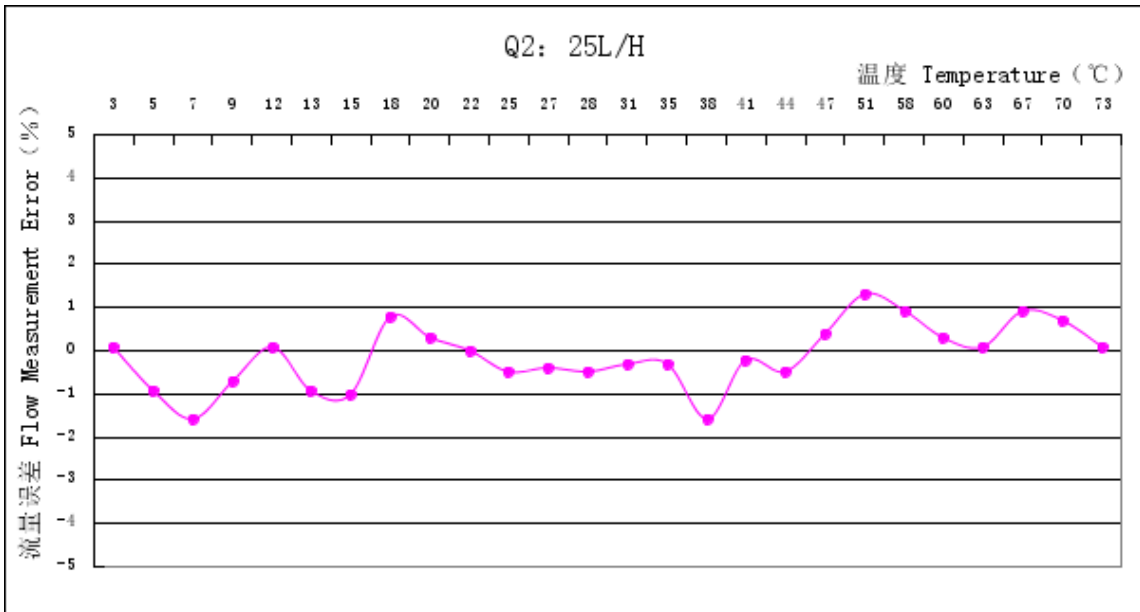
Accuracy of measurement:

测试流量点 Tested flow rate	实际测量精度 Actual measurement accuracy	国家二级表测量精度 National standard for Class 2 Water Meter
Q1	±2.5%	±5%
Q2	±2.5%	±5%
Q3	±1%	±2%

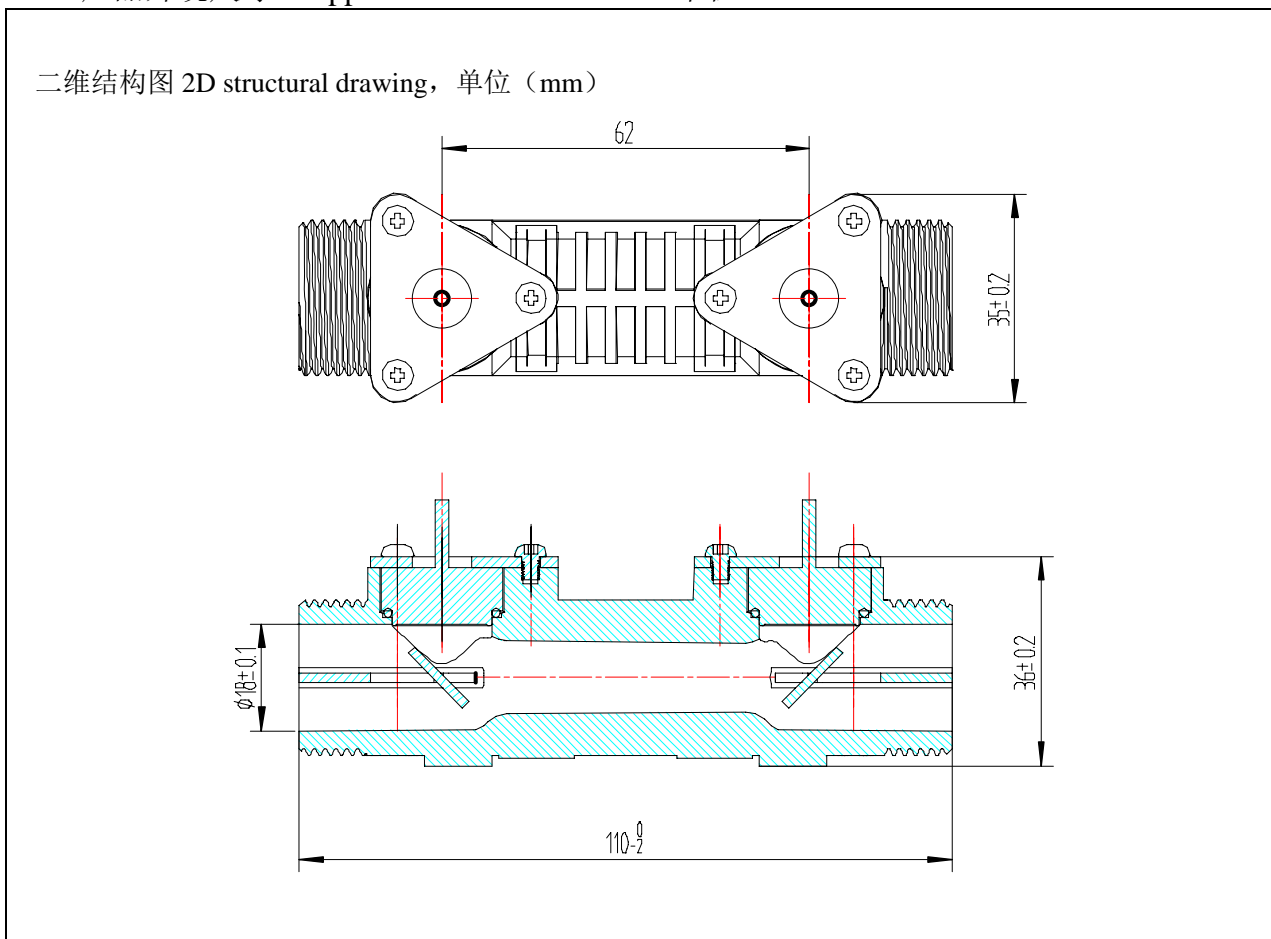
(2)测量精度误差随温度变化曲线:

Measurement error with temperature change:





6. 产品外观尺寸: Appearance and dimensions:单位 (mm)



四. 包装 PACKAGING

Pcs/箱 Pcs/box	外包装箱尺寸 (cm) External packing box dimension	包装盒尺寸 (cm) Packing case dimension	毛重(kg) Gross weight	净重(kg) Net weight
100	47.8*28*22	22.5*12.5*3.8	12.1	10.7

五. 注意事项 PRECAUTIONS FOR USE

(1)测量精确度误差曲线基于与我司线路板搭配使用情况,对于其它线路板搭配时,误差不做保证;

(2)产品最大静态耐压 3.2MPa。

(3)该产品只能使用于水、均质液体环境中,不能在气体中使用;

(4)设计驱动线路时请考虑防信号干扰;

(5)为了防止工作失效产生事故,次级产品设计时应加入防失效功能;

(6)为了防止传感器发生故障、工作失效或性能退化,应避免在如下或类似条件下使用本产品:

a. 强烈的冲击或振动;

- b. 有溶解性有机物的环境下;
- c. 超过允许输入电压。

(1)The measurement error with temperature change is recorded when the product is connected to Audiowell's circuit board. The measurement error is not guaranteed when the product is used with other circuit boards.

(2) The maximum permissible hydrostatic pressure is 3.2MPa.

(3)This product should only be used for water and homogeneous liquid measurement. Do not use the product for air flow measurement.

(4) Precautions should be taken to prevent interference in the design of drive circuit.

(5)To avoid accidents caused by product failure, the design of secondary products should include failure protection.

(6)To prevent fault, failure and performance degradation of the sensors, avoid use this product in the following or similar conditions:

- a. Intense shock or vibration;
- b. In the environments that contain dissolved organic matter;
- c. The input voltage exceeds the rated maximum input voltage.

六. 修订记录 REVISION HISTORY

文件修订记录 File revision history			
修订时间 Revsion time	修订版本 Version of revision	内部 ECR 编号 The number of ECR	修订内容 Contents of revision
2015/3/30	/	/	新建规格书 New data sheet

制作/日期 Accomplished by/Date		确认/日期 Approved by/Date	
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