



Part Number: HS0016-000

Model Number: RC20/HS-US0004-000-01

### Overview

The Ultrasonic Cold Water Meter Body is comprised of a pair of ultrasonic flow sensors and a DN20 polymer pipe.

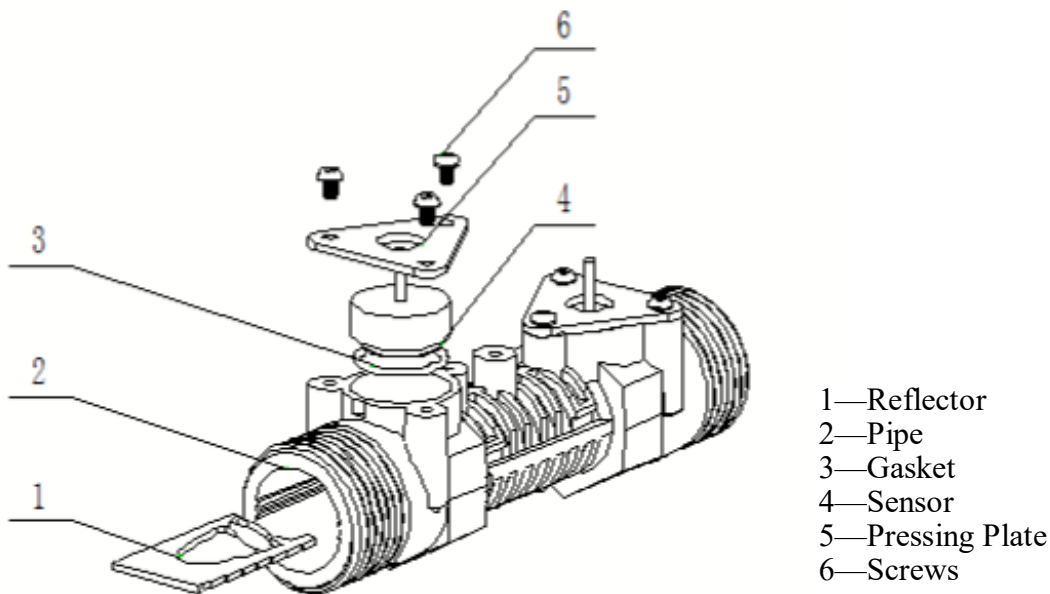
As the signal generating unit of the ultrasonic cold water meter, the Ultrasonic Cold Water Meter Body is used for supplying accurate, stable and continuous ultrasonic signals to the meter circuit.

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.

### Construction and Principle

#### 1. Mechanical construction

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



#### 2. Measuring Principle

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.

#### TENTATIVE RELEASE:

This specification is based on design objectives and is strictly Preliminary and subject to change. Test data may exist, but this specification is subject to change based on the results of additional testing and evaluation. Application specific specifications will be produced for approval prior to production product being released.

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## Technical Data

### 1. Electrical Characteristics of the built-in sensors:

Item	Unit	Standard	Test Condition T=25°C
Thick Resonant frequency (Fs)	KHz	975 ± 30	Agilent 4294A
Resonant impedance (R)	Ω	≤ 110	Agilent 4294A
Static capacitance (C <sub>0</sub> )	pF	1150 ± 20%	LCR Meter at 1000Hz/1V

### 2. Meter Body Parameters:

Item	Unit	Standard	Test Condition T=25°C
Received Signal Amplitude	mV	≥350	1Vp-p / 20 Pulses Interval 20ms at 1MHz
Maximum Input Voltage	Vp-p	5	At 1 MHz
Maximum Allowable Working Pressure	MPa	1.6	
Installation Length	mm	130	Vernier Caliper
Connecting Thread	BSP	G1	Threaded Gauge
Operating Temperature	°C	0.1 ~ +50	
Storage Temperature	°C	-25 ~ 55	
Pressure Loss	KPa	≤40	Q=4.0m <sup>3</sup> /h, T<30 °C
Installation Position	Inlet		
Installation Mode	Threaded connection		

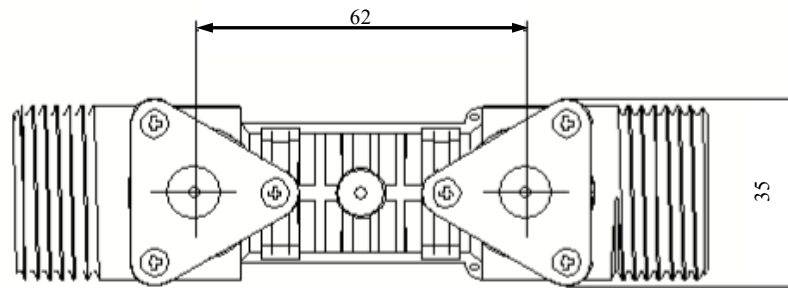
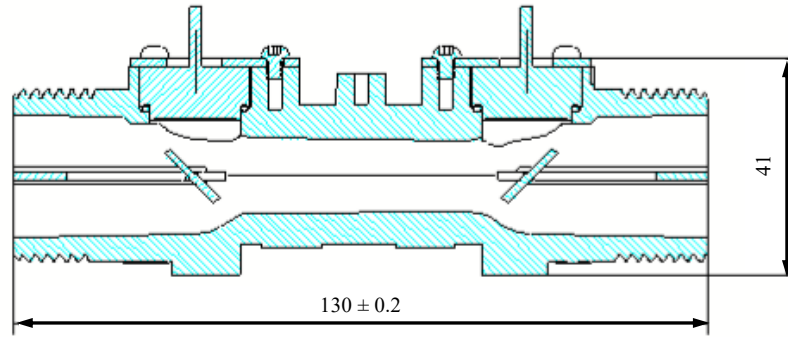
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## Technical Data

6. Appearance and dimensions (mm):



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## Precautions for Use:

1. The measurement error with the 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 using this product in the following or similar conditions:
  - a. Intense shock or vibration
  - b. In environments that contain dissolved organic matter
  - c. The input voltage exceeds the rated maximum input voltage.

## Revision History:

Version	Date (MM/DD/YY)	DWN	Statement
A1.0	11/10/2014		New Data Sheet

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