

# Product Manual

## 1. Product introduction:

### ISU58-14TRAJ-T6 [View Details](#)

1.1 Structure type: waterproof and airtight

product, the structure diagram is as follows:



1.2 Usage type: transceiver integrated

1.3 Scope of application: ultrasonic ranging and automobile reversing anti-collision device, etc.;

1.4 Product advantages: This product has frequency bandwidth, high sensitivity, and signal-to-noise ratio

It has the advantages of good, simple structure, reliable work and light weight

## 2. Performance parameters

### 2.1 Technical parameter standards:

No.	Inspection items	Test conditions	Test Standards	Note:
1	Center Frequency (KHZ)	Frequency scanner	$58 \pm 1$	Frequency scanner
2	Capacitance (PF)	1KHZ; $25 \pm 2^{\circ}\text{C}$	$2000 \pm 15\%$	Capacitance meter

3	Angle (°).	At normal room temperature, the probe is 60cm from the ground and 60cm away from the probe, the probe is a $\Phi 75$ mm PVC pipe, the pipe height is 1M, the probe 2 is a $\Phi 120$ mm PVC pipe, the pipe height is 1.1M, and the test environment requires that there are no obstacles within a radius of 2M, according to Fig.1	X-axis direction: $90 \pm 10$ (°). Y-axis direction: $45 \pm 10$ (°)	Motherboard Number: KM/JL 97064,
4	Aftershock (ms)	Simulated test motherboard, reading as Fig.2	$\leq 1.8$	Motherboard number: KM/JL 97 064
5	Echo Sensitivity (US)	Distance: 1.5m, Obstacle: $\Phi 75$ mm*1000mm, the reading is shown in Fig.2	Lower limit samples were compared	Motherboard number: KM/JL 97 064
6	Sensitivity (dB)	Transmitting frequency: $(58 \pm 1)$ KHZ 0dB=10V/pa	-81	Reference value
7	Sound pressure (dB)	Distance: 30cm Input voltage: 10Vrms	$\geq 108$	Reference value
8	Operating Temperature (°C)	-40~+80(°C)	Qualified	High and low temperature chambers
9	Storage Temperature (°C)	-40°C~+85°C	Qualified	High and low temperature chambers
10	Maximum Drive Voltage (Vp-p)	Pulse width 0.8ms with 60ms interval	150	Oscilloscope Reference value

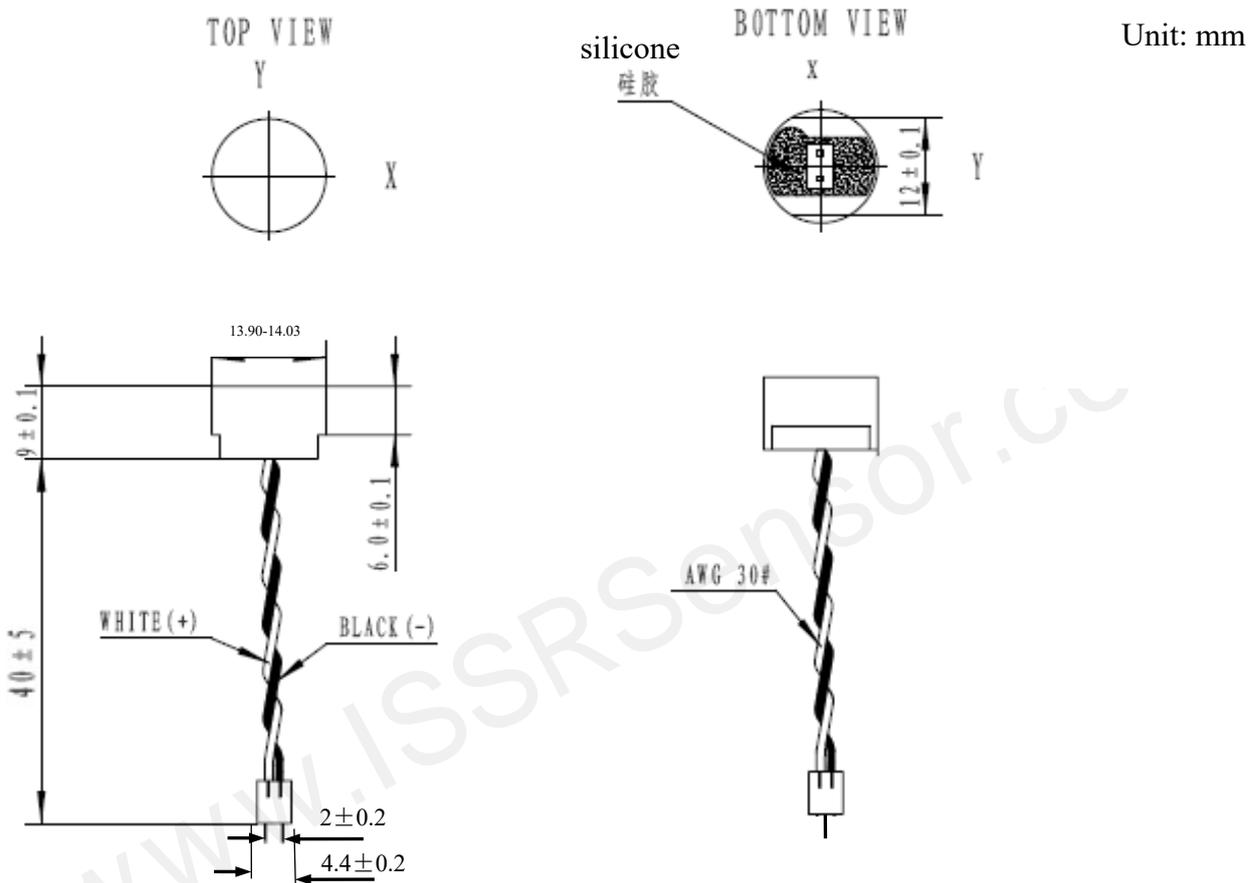
## 2.2 Environmental characteristics

No.	Test items	Test conditions	Test Standards	
1	Temperature characteristics	The ambient temperature of the product is stable at $-40\pm 3$ ( $^{\circ}$ C) for 30 minutes, 30 minutes at $25\pm 3$ ( $^{\circ}$ C) (normal temperature), and 30 minutes at $+85\pm 3$ ( $^{\circ}$ C).	At the center frequency, the aftersound and echo sensitivity varies by $\leq 30\%$ compared with the room temperature performance in these three temperature ranges	
2	Damp-heat test	Temperature: $60\pm 2^{\circ}$ C Humidity: RH 90~95% Duration: 100 hours After removal, it was restored at normal atmospheric pressure for 2 hours	At the center frequency, the aftersound and echo sensitivity changes by $\leq 30\%$ compared to the initial value	Once a year
3	Impact test	Acceleration: Sine 100G (980m/s <sup>2</sup> ) Directions: 3 directions (X/Y/Z) Number of impacts: 3 times/in each direction	At the center frequency, the aftersound and echo sensitivity changes by $\leq 30\%$ compared to the initial value	Once a year
4	Vibration test	Amplitude: 1.5mm, Frequency: $10\sim 70$ Hz, Sweep cycle: 5 minutes, Time: 3 hours in each of the 3 directions.	At the center frequency, the aftershock and echo sensitivity varies by $\leq 30\%$ compared to the	Once a year

			initial value	
5	High temperature test	<p>Leave at a high temperature of +85° C for 120 hours;</p> <p>After removal, it was restored at normal atmospheric pressure for 2 hours</p>	<p>At the center frequency, the aftershock and echo sensitivity varies by <math>\leq 30\%</math> compared to the initial value</p>	Once a year
6	Low temperature test	<p>Leave at a low temperature of -40° C for 120 hours</p> <p>After removal, it was restored at normal atmospheric pressure for 2 hours</p>	<p>At the center frequency, the aftershock and echo sensitivity varies by <math>\leq 30\%</math> compared to the initial value</p>	Once a year
7	Temperature cycling	<p>Low temperature: <math>-40 \pm 3^\circ \text{C}/1 \text{ h}</math>;</p> <p>High temperature: <math>+85 \pm 3^\circ \text{C}/1 \text{ H}</math>;</p> <p>Number of cycles: 50 times.</p> <p>After completion, it was removed and restored at normal atmospheric pressure for 2 hours</p> <p>Note: Low temperature first and then high temperature</p>	<p>At the center frequency, the aftersound and echo sensitivity changes by <math>\leq 30\%</math> compared to the initial value</p>	Once a year
8	Drop test	<p>Height: 1m height free fall to the concrete floor, times: 10 times.</p>	<p>At the center frequency, the aftersound and echo sensitivity changes by <math>\leq 30\%</math> compared to the initial value</p>	Once a year

Note: Each test is a separate test, and the test product is not less than 5PCS.  
Normal temperature conditions  $T=25\pm 3^{\circ}\text{C}$ ,  $H=45\sim 65\%R.H$

### 3. Overall dimensions



### 4. Quality assurance

4.1 In order to ensure the quality of the company's products, the company adopts the TS16949 quality management system for management, formulates strict quality purposes and directions, and the company aims to pursue zero defects and endless improvement of the quality policy, and continue to meet the needs and expectations of customers for the physical quality of products. The quality policy is an action program that all employees of the company

must abide by and follow.

4.2 In order to further ensure the quality of our products, MIL-STD-105E General Level II is used as the basis for single sampling level (except for special provisions) to inspect incoming materials and factory products. The criteria for determining it are as follows:

Quality qualification criteria (AQL): CR (fatal) = 0, MA (primary) = 1.0, MI (secondary) = 2.5

4.3 The Company has received the following honors:

In 2013, it obtained the ISO/TS16949:2009 audit certification issued by the American Quality Certification (AQA). The certification number is: CN 00014417

In 2009, it obtained the utility model patent certificate of "Ultrasonic Sensor with Adjustable Sensitivity and Aftervibration" from the State Intellectual Property Office. Patent No.: ZL 2007 2 0080812.7

In 2008, it obtained ISO 9001:2008 quality management system certification through Shanghai Daweishi Certification Co., Ltd. The certification number is: Q19110959

In 2008, it became a special supplier of China Automobile Chain.

## 5. Order specifications

HC 58 - 14 TR A J - T6

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Company Code Center Frequency Outer Diameter of Probe Transceiver Integral Transceiver Housing Shape Connecting Wire

with Connector Serial Number

## 6. Packaging

1) Product packaging requirements: carton corners are stacked neatly and neatly, without deformation, damage, or dirt. The sealing tape is pasted flat and firm, without obvious unevenness, warping and other phenomena. The label position is uniform, and there is no dirt, warping, obvious skew and other phenomena.

2) Product Packaging Specifications:

a. PE Packaging tray: 255mm\*86mm\*22mm

b. Inner packing: 257mm\*94mm\*120mm

c. Outer packaging: 520mm\*380mm\*245mm

d. The quantity of products placed in each box is 20pcs, and the quantity of products placed in each small box is 100pcs.

The number of products placed in the outer packaging box is 1600pcs.

3) Product storage method:

The stacking method of the product adopts parallel stacking up and down to avoid staggered stacking, and does not allow large boxes to press small boxes or small boxes to press large boxes. Only a maximum of 2 stacks are allowed.

## 7. Precautions

- 1) The product can only be used in a gas environment, not in liquid.
- 2) In order to prevent accidents caused by work failure, the anti-failure function should be added in the design of secondary products.
- 3) If you want to add a shell to this product, separate the case from the sensor with a soft rubber ring. In order not to affect the vibration of the sensor, the front face of the sensor should be kept free, otherwise the sensor performance will change.
- 4) In order to prevent sensor failure, work failure, or performance degradation, this product should be avoided under the following or similar conditions.
  - a. Strong shock or vibration;
  - b. Prolonged exposure to high temperature and high humidity environments;
  - c. In corrosive gases or sea breezes;
  - d. In an environment with dissolved organic matter;
  - e. In a dusty environment;
  - f. Exceeding the allowable input voltage;
- 5) To prevent additional stress on the leads, do not apply external force to the newly soldered leads. If necessary, clamp the root of the lead first.
- 6) The quality guarantee period is within one year after the product is

delivered, and defective sensors due to the responsibility of the manufacturer during the warranty period can be replaced free of charge. The following situations are not covered by the guarantee.

- a. Improper use or handling by the user.
- b. Alterations or repairs made by the user.
- c. Any other circumstances that are not the responsibility of the producer, such as natural disasters, accidents, etc.

This warranty covers product replacement only. Any losses arising from the failure or invalidation of the sensor and the cost of replacing the product are not covered by this warranty.

## **8. Attached drawings**

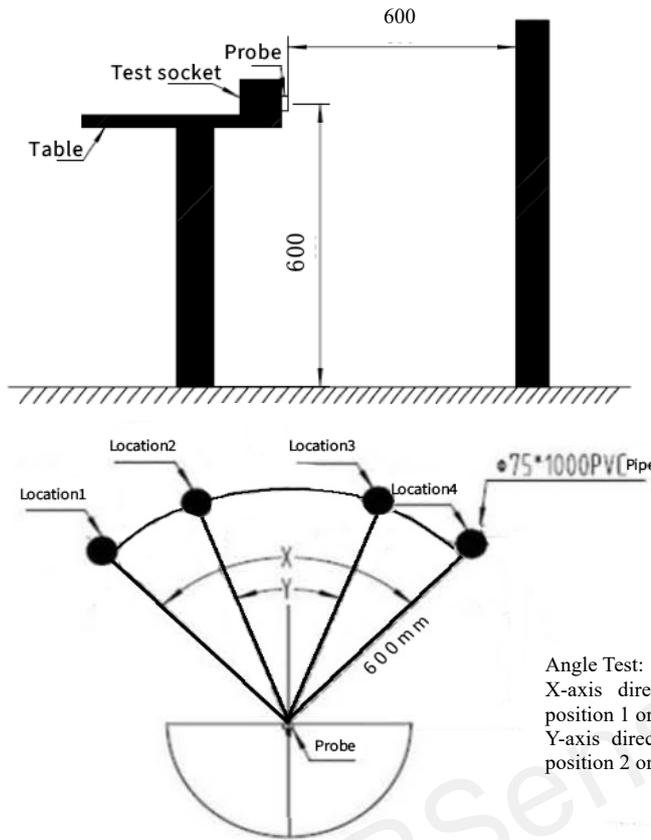


Fig.1

Angle Test:  
X-axis direction angle: PVC pipe placed in position 1 or position 4  
Y-axis direction angle: PVC pipe is placed in position 2 or position 3

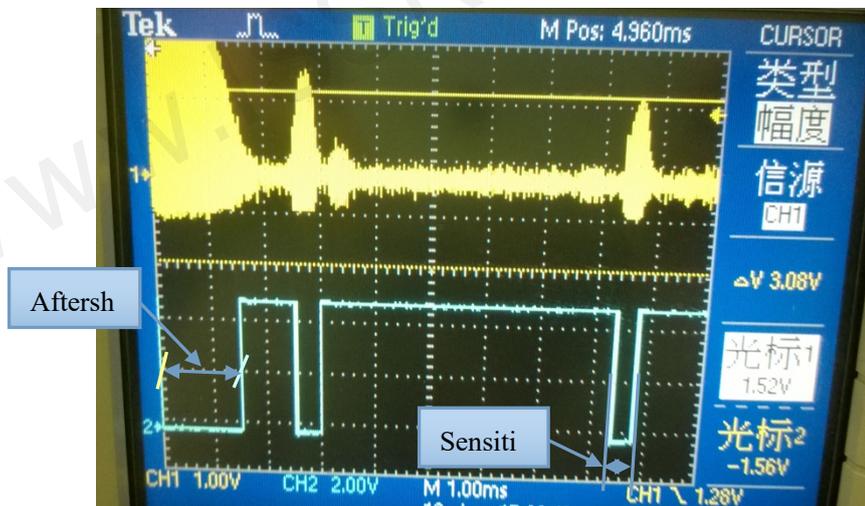


Fig.2