

超声波传感器产品规格书

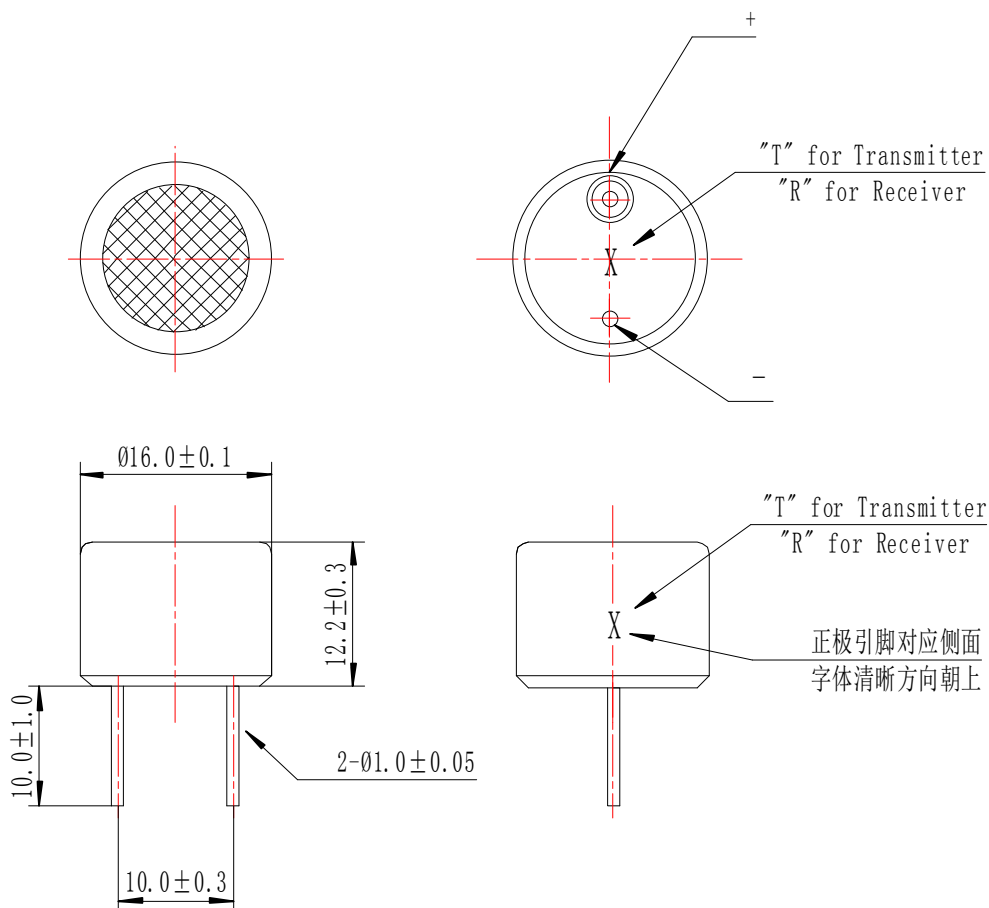
■ 产品型号: AW8T40-160A00-04 & AW24R40-160A00-04

■ SPECIFICATIONS 规格:

No	ITEM 项目	AW8T40-160A00-04	AW24R40-160A00-04
1	Center frequency 中心频率 (KHz)	40.0±1.0KHz	40.0±1.0KHz
2	Sound Pressure Level 声压 (dB) 0dB=0.0002 μ bar	≥117dB	-----
3	Sensitivity 灵敏度 (dB) 0dB=1volt/μ bar	-----	≥-60dB
5	Beam Angle 指向角 -6dB	55°typical	
6	Capacitance 静电容量 (pF)	2100±20%pF	2500±20%pF
7	Max. Driving Voltage 最大驱动电压 (RMS)	80Vp-p	
8	Working Temperature 工作温度 (°C)	-20 to +70°C	
9	Storage Temperature 贮存温度 (°C)	-30 to +80°C	

Note: 1) "T" for Transmitter "R" for Receiver;

■ DIMENSIONS 尺寸:



- 注: 1) 外壳经过外观处理, 415#颜色, 具体以色板为准;
 2) 产品底部印有黑色字母 "T" for Transmitter, "R" for Receiver;
 3) 产品正极引脚侧面印有黑色字体向上的字母 "T" for Transmitter, "R" for Receiver.

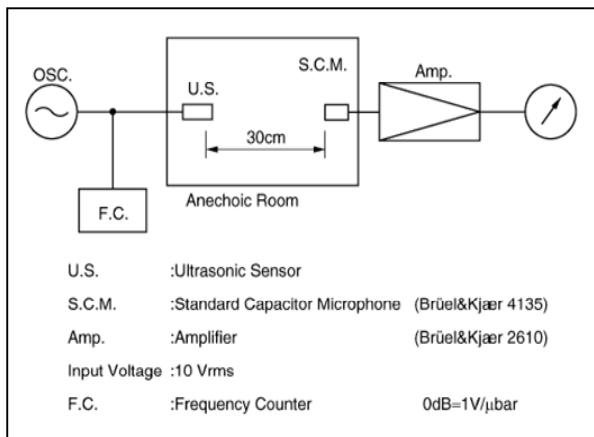


■ TESTING CONDITION AND INSTRUMENT 测试条件和仪器

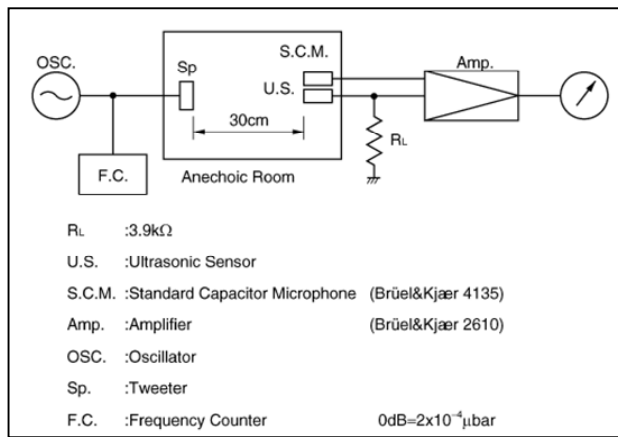
ITEM 项目	TESTING CONDITION 测试条件	TESTING INSTRUMENT 测试仪器
Center frequency 中心频率	T=25~30°C H ≤85%RH	压电换能器阻抗分析系统 II 型
Sound Pressure Level 声压	at 40KHz/30cm/10Vrms	SoundCheck 4.1
Sensitivity 灵敏度	at 40KHz/30cm/0.1Vrms	SoundCheck 4.1
Beam Angle 指向角	at 40KHz/30cm/10Vrms	SoundCheck 4.1
Capacitance 静电容量	at 1KHz/1V 25°C	ZL5 智能 LCR 测量仪

■ TEST CIRCUIT 测试线路

Transmitter impedance

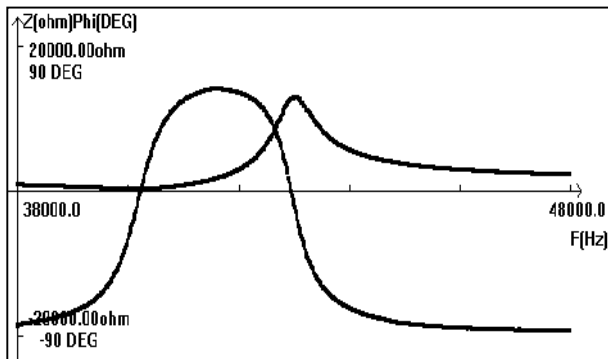


Receiver 接收

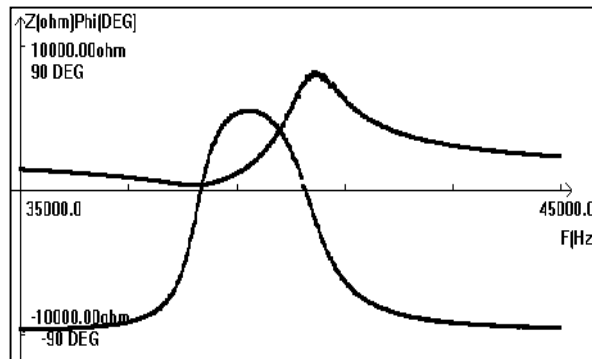


■ TYPICAL CURVE 典型曲线

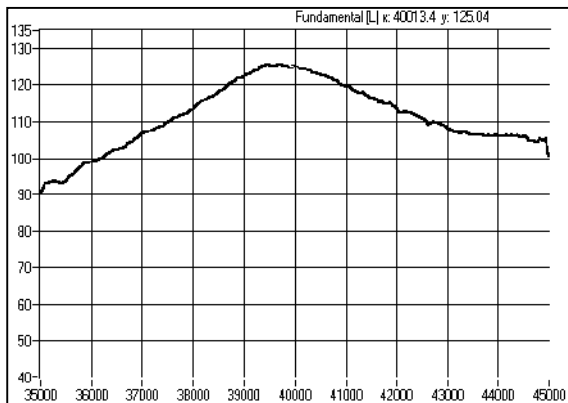
Transmitter impedance



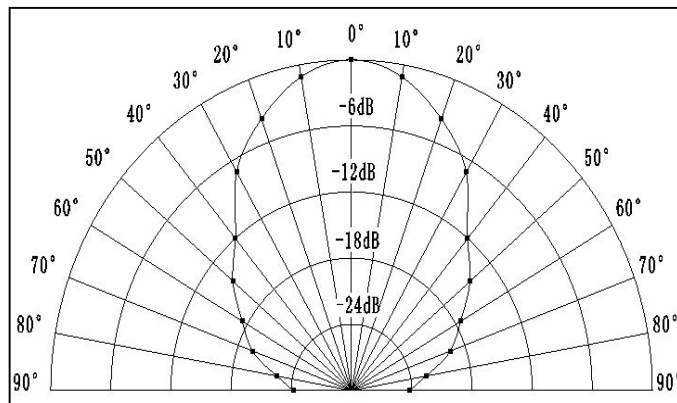
Receiver impedance



Transmitter SPL 发射声压



Beam Angle 指向角



■ ENVIRONMENT CHARACTERISTICS 环境特征

<p>High temperature test(高温试验):</p> <p>The variation of the sensitivity or the sound pressure level at 40.0KHz is within $\pm 3\text{dB}$ compared with initial figures at 25°C in 24 hours after following test conditions:</p> <p style="padding-left: 40px;">Temperature: $85 \pm 2^{\circ}\text{C}$</p> <p style="padding-left: 40px;">Time: 96 hours</p> <p>升温到 $85 \pm 2^{\circ}\text{C}$ 保持 96H, 完成后 25°C 放置 24H, 40KHz 频率下的灵敏度、声压与初始值变化在 $\pm 3\text{dB}$。</p>
<p>Low temperature test(低温试验):</p> <p>The variation of the sensitivity or the sound pressure level at 40.0KHz is within $\pm 3\text{dB}$ compared with initial figures at 25°C in 24 hours after following test conditions:</p> <p style="padding-left: 40px;">Temperature: $-40 \pm 2^{\circ}\text{C}$</p> <p style="padding-left: 40px;">TIME: 96hours</p> <p>降温至 $-40 \pm 2^{\circ}\text{C}$ 保持 96H, 完成后 25°C 放置 24H, 40KHz 频率下的灵敏度、声压与初始值变化在 $\pm 3\text{dB}$。</p>
<p>Humidity test(湿热试验):</p> <p>The variation of the sensitivity or the sound pressure level at 40.0kHz is within $\pm 3\text{dB}$ compared with initial figures at 25°C in 24 hours after following test conditions:</p> <p style="padding-left: 40px;">Temprature: $40 \pm 2^{\circ}\text{C}$</p> <p style="padding-left: 40px;">Humidity: 95% R. H</p> <p style="padding-left: 40px;">Time: 100 hours</p> <p>升温到 $40 \pm 2^{\circ}\text{C}$、加湿到 95%RH, 保持 100H, 完成后 25°C 放置 24H, 40KHz 频率下的灵敏度、声压与初始值变化在 $\pm 3\text{dB}$。</p>
<p>Vibration Test (振动试验):</p> <p>The variation of the sensitivity or the sound pressure level at 40.0KHz is within $\pm 3\text{dB}$ compared with initial figures at 25°C in an hour after following test conditions:</p> <p>Vibration frequency: 10Hz to 55Hz;</p> <p>Amplitude: 1.5mm ;</p> <p>SweepPeriod: 1 minute;</p> <p>Direction: 3directions;</p> <p>Time: 3hours/direction</p> <p>振动频率 10Hz ~ 55Hz , 振幅 1.5mm, 扫频 1 分钟, X, Y, Z 三轴, 每轴振动 3 小时, 完成后 25°C 放置 1H</p> <p>40KHz 频率下的灵敏度、声压与初始值变化在 $\pm 3\text{dB}$。</p>
<p>Drop test(跌落试验):</p> <p>The variation of the sensitivity or the sound pressure level at 40.0KHz is within $\pm 3\text{dB}$ compared with initial figures at 25°C in an hour after following test conditions:</p> <p style="padding-left: 40px;">Height: 700mm dropping the surface of 10mm thick wooden board</p> <p style="padding-left: 40px;">Falls: 2 times</p> <p style="padding-left: 40px;">direction: 2directions</p> <p>从 700mm 的高度自由跌落到 10mm 厚度的木地板上, 跌落 2 次, 任意二个方向进行, 试验后, 25°C 放置 1H, 40KHz 频率下的灵敏度、声压与初始值变化在 $\pm 3\text{dB}$。</p>

■ 备注

1: 注意事项

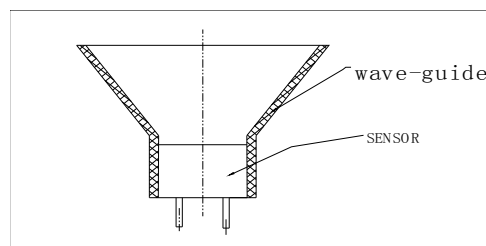
1. DESIGN RESTRICTION/PRECAUTIONS 设计限制/预防

■ This sensor is designed for use in air environment. Do not use it in liquid.
该探头是按照应用于空气环境而设计的，禁止用于液体环境。

■ In the case where secondary accidents due to operation failure or malfunctions can be anticipated, add a fail safe function to the design.

■ 为了防止归于操作失败或者故障所致的可预测的次要事故，给设计增加一个失效安全功能。

■ In the case where this sensor is to be Shocked or impacted, fit a “V” wave-guide on the sensor (see the following drawing), which also is to improve receiving sensitivity .
为了防止探头受到外力的冲击或挤压，并加强探头的接收能力，应给探头加上 V 型波导管。如图示：



2. USAGE RESTRICTION/PRECAUTIONS 使用限制/预防：

■ To prevent sensor malfunctions, operational failure or any deterioration of its characteristics, do not use this sensor in the following, or similar conditions:

为了防止探头故障，操作失败，或者其任何性能退化，禁止使用本探头于以下情况或者相似环境条件：

- a) strong shock or vibration. 强烈的冲击或者振荡情况；
- b) high temperature and humidity for a long time. 长时间处于高温高湿的环境；
- c) orrosive gases or sea breeze. 腐蚀气体或者海风环境；
- d) an atmosphere of organic solvents. 有机溶剂环境；
- e) dirty and dusty environments that may contaminate the sensor front.
可能污染探头顶部的肮脏、灰尘环境；
- f) Over specified allowable input voltage . 超过指定允许输入电压的条件。

■ Do not solder adding stress on outer lead, also do not apply stress like spin or pressure just after soldering. In case you form the leads, support the root firmly.

禁止在焊接插引脚时施加应力和刚焊接后施加旋转应力或压应力。在焊接引线时，应紧紧地支撑住根部。

3. WARRANTY 保证：

■ Time limit 使用期限

Warranty period is one year after delivery. 交货后一年内。

■ Scope 范围

Defective sensors attributable to manufacturer' responsibility shall be replaced for free during the warranty period. However, following cases are out of the scope.

在保证期内，由于我司责任造成的有缺陷的探头，可免费更换。但是，以下情况在这范围之外：

- a) Unsuitable handling or misuse by user. 使用者不合理的处理或者误用；
- b) Modification or repair by user. 使用者的修改或者修理；

c) Any other cases not due to manufacturer's responsibility such as natural calamity, accident .etc. 不归于我司责任的其它任何情况，譬如自然灾害和事故等；
 This scope covers only replacement. 此范围仅适用于更换。
 Any loss derived from failure or malfunction of the sensor, or cost on replacing is excluded from this warranty scope. 源于探头失效或者故障的任何损失，或替换费用排除在此保证范围之外。

■ 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
2016/6/8	A1	/	新建规格书
2016/7/8	A2	/	增加产品外壳喷码标识

