

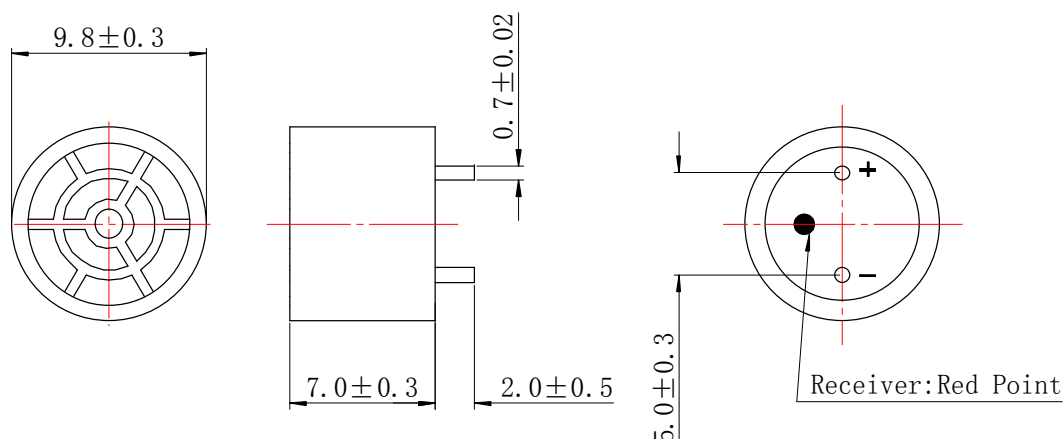
PIEZO ULTRASONIC SENSOR SPECIFICATIONS

■ MODEL 型号: AW8R40-100B01-07

■ SPECIFICATIONS 规格

No.	ITEM 项目	AW8R40-100B01-07
1	Center frequency 中心频率 (KHz)	40.0±1.0KHz
2	Sensitivity 灵敏度 (dB) 0dB=1volt/ μ bar	\geq -65dB
3	Beam Angle 指向角 -6dB	100°typical
4	Capacitance 静电容量 (pF)	1700±20%pF
5	Housing material 腔体材料	ABS
6	Color 颜色	Black
7	Max. Driving Voltage 最大驱动电压(RMS)	20Vrms
8	Working Temperature 工作温度(°C)	-20 to +70°C
9	Storage Temperature 贮存温度(°C)	-30 to +80°C

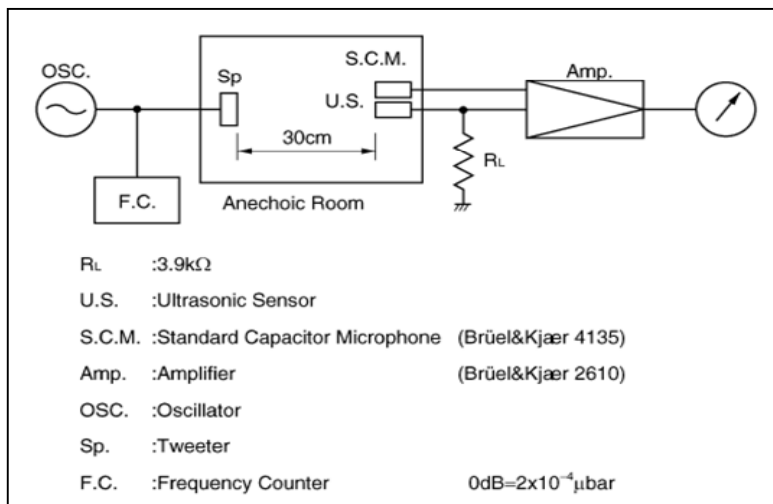
■ DIMENSIONS 尺寸:



■ TESTING CONDITION AND INSTRUMENT 测试条件和仪器

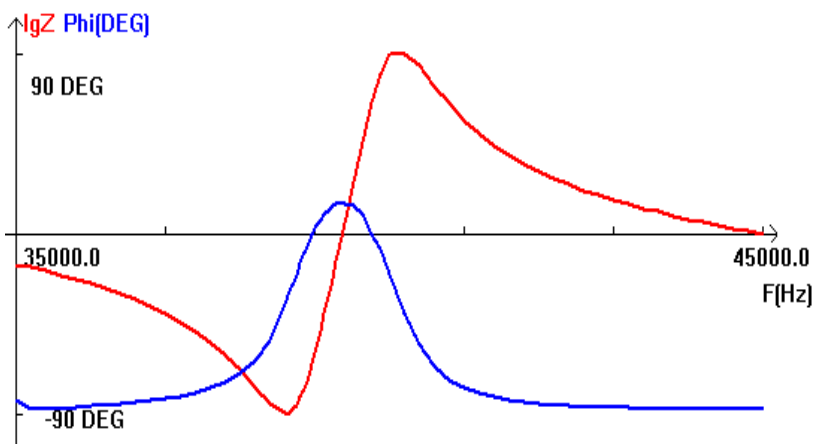
ITEM 项目	TESTING CONDITION 测试条件	TESTING INSTRUMENT 测试仪器
Center frequency 中心频率	T=25~30°C H \leq 85%RH	压电换能器阻抗分析系统 II 型
Sound Pressure Level 声压	at 40KHz/30cm/10Vrms	SoundCheck 4.1
Sensitivity 灵敏度	at 40KHz	SoundCheck 4.1
Beam Angle 指向角	-----	SoundCheck 4.1
Capacitance 静电容量	at 1KHz/1V 25°C	ZL5 智能 LCR 测量仪

■ TEST CIRCUIT 测试线路



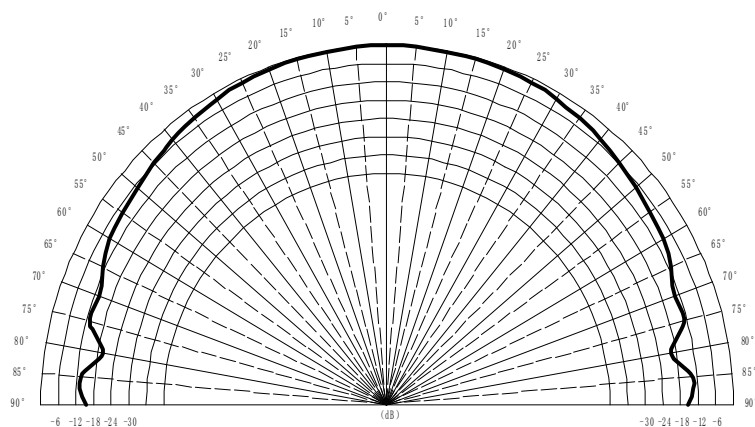
Receiver 接收

■ TYPICAL CURVE 典型曲线



Receiver impedance

■ Beam Angle 指向角



■ ENVIRONMENT CHARACTERISTICS 环境特征

<p>High and low temperature (from -20°C to +70°C at a relative humidity of 30%) 温度变化范围: -20°C~+70°C 相对湿度: 30%</p>	<p>Sound pressure level and peak sensitivity shall not change by more than 15dB in the temperature range from the high temperature to the low temperature 温度变化范围内, 声压和灵敏度峰值的变化: ≤15dB</p>
<p>Humidity of 10% to 90% at the temperature of 25°C 温度: 25°C 湿度变化范围: 10%~90%</p>	<p>Sound pressure level and sensitivity shall not change by more than 6dB in the humidity range 湿度变化范围内, 声压和灵敏度的变化 ≤6dB</p>
<p>Storage at +80°C for 96 hours and at -30°C for 96 hours followed by a normalization period at 25 °C . As shown in FIG1. 存储: 升温到+80°C 保持 96 小时, 降温到-30°C 保持 96 小时, 然后升温到室温 25°C。如图 FIG1</p>	<p>All sensitivity or sound pressure level shall be within 3 dB of the specified values after the device is subjected to any or all of the conditions.</p> <p>装置遭受所有四种情况或者其中任何一种情况, 所有灵敏度或声压水平应在指定值的±3 dB 范围以内</p>
<p>Operation at 95% relative humidity and 40°C for 100 hours, followed by a normalization period of 24 hours at 30% and 25°C. As shown in FIG2. 工作: 在相对湿度 95% 和温度+40°C 条件下保持 100 小时, 然后在湿度 30% 和温度 25°C 条件下保持 24 小时。如图 FIG2</p>	
<p>Vibration at 10Hz to 55Hz , 1.5mm amplitude. 1 minute sweep. X, Y, Z, 3 each axis for 3 hours. 振动: 频率 10Hz to 55Hz , 振幅 1.5mm, 扫频 1 分钟, X, Y, Z 三轴, 每轴 3 小时。如图 FIG3</p>	
<p>Drop Test: Drop a sensor from the height of 700mm onto the surface of 10mm thick wooden board (FIG4) . Two directions; Fall the body sport freely. 跌落: 从 700mm 的高度自由跌落到 10mm 厚度的木地板上, 任意二个方向进行。如图 FIG4</p>	



FIG1 TEMP. TEST

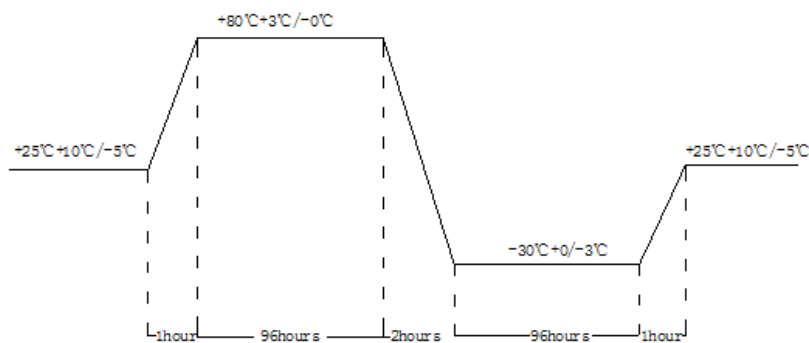


FIG 2 TEMP. /HUMIDITY TEST

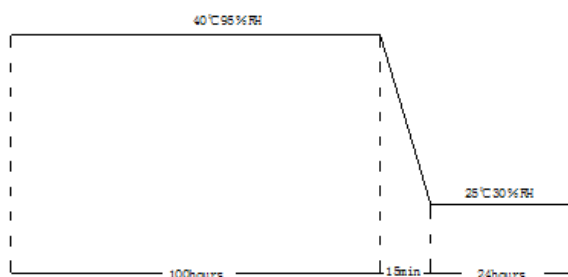


FIG3 VIBRATION TEST

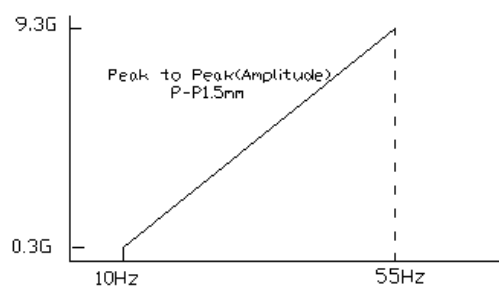
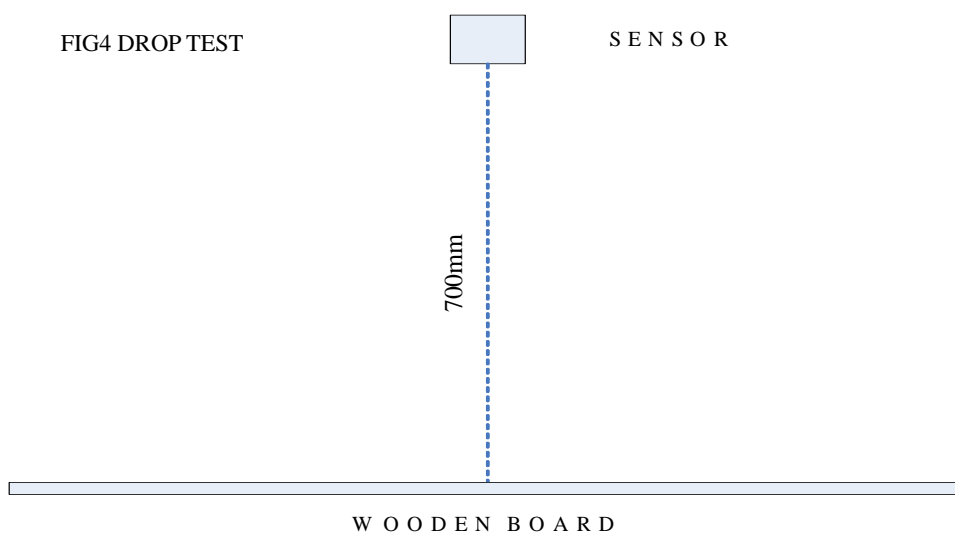


FIG4 DROP TEST



■ 备注

1: 注意事项

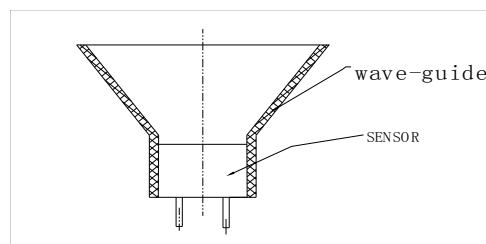
1. DESIGN RESTRICTION/PRECAUTIONS 设计限制/预防

■ 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) In strong shock or vibration. 强烈的冲击或者振荡情况；
- b) In high temperature and humidity for a long time. 长时间处于高温高湿的环境；
- c) In orrosive gases or sea breeze. 腐蚀气体或者海风环境；
- d) In an atmosphere of organic solvents. 有机溶剂环境；
- e) In 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.

禁止在焊接插针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，应紧紧地支撑住跟部。

■ 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
2017.10.27	A1	/	新建规格书

