Specification For Approval

Customer

Description Standard Enclosed Type Air Ultrasonic Transducer

Part Number 400E08S

Issued Date May 25 2015

Quantity

Version

Customer Ref. No.

Customer Approval Signature/Chop

Approved By	Checked By	Prepared By

1 Scope

Model 400E08S is a miniature air ultrasonic transducer housed in a one piece of stainless steel of SUS316, which is highly resist to corrosive environment.
This transducer has a feature of broad beam angle of around 120° and free of side lobes.

2 Part Number

400E08S Standard Enclosed Type Air Ultrasonic Transducer

3 Dimension

As per Figure 1

4 Specification

(rated at temperature 25±3℃, 45 to 60% RH, unless otherwise noted)

	Items	Specification	Remarks
4-1	Center Frequency (Fc)	40.0±2.0KHz	
4-2	Sound Pressure Level	102dB (min)	At Frequency of max SPL 0dB re 0.0002μbar Measured at 30cm 10Vrms Sine Wave input Detail see attached Figure 2
4-3	Sensitivity	-78dB (min)	At Frequency of max SEN 0dB=1Volt/μbar Detail see attached Figure 3
4-4	Figure Of Merit (SPL+SEN)	15dB (min)	At Fc
4-5	Bandwidth (FOM)	3.0KHz (min)	-6dB
4-6	Capacitance	1900±20%pF	Measured at 1KHz
4-7	Max. Driving Voltage	15Vrms	Cont.
4-8	Total Beam Angle	120°±10°	-6dB
4-9	Operation Temperature	-30° to +70°C	
4-10	Storage Temperature	-40° to +80°C	

5 Environmental Characteristics

5-1 Overall echo sensitivity shall not change by more than ±3dB in the temperature range of -30℃ to 70℃, at a relative humidity of ±50%

5-2 Overall echo sensitivity shall not change by more than ±3dB in the humidity range of 10% to 90% at the temperature of 25℃

5-3 Overall echo sensitivity shall be within ±3dB of the specified values after the device is subjected to any or all of the belows

5-3-1 Operation at 90% relative humidity and 40℃ for 100 hours, followed by a normalization period of 24 hours at 30% and 25℃

5-3-2 Storage at -40℃ to + 80℃ for 24 hours followed by a normalization period of an hour at 25℃

5-3-3 Vibration at 10 to 55Hz, 1.5mm amplitude. 1 minute sweep. X, Y, Z, 3 each axis for 3 hours.

5-3-4 Shock: After impact of 50G is applied following. X, Y, Z, 3 axis /3 cycle / each direction.

5-3-5 Drop: After free drop from 1 meter height onto concrete floor, 3 times

6 Mechanical Characteristics

Lead strength

To pull longitudinally 1.0 kgf min.

To push longitudinally 1.0 kgf min.

7 Warranty

7-1 Warranty period is one year after delivery

7-2 Defective transducers attributable to manufacturer's responsibility shall be replaced for free, during the warranty period. However, following cases are out of the this replacement.

7-2-1 Unsuitable handling or misuse by user.

7-2-2 Modification or repair by user.

7-2-3 Any other cases not responsible for manufacturer such as natural calamity, accident, etc.

This warranty covers only replacement. Any loss derived from failure or malfunction of the transducer, or cost to replace is excluded from this warranty.

Dimensions: unit mm

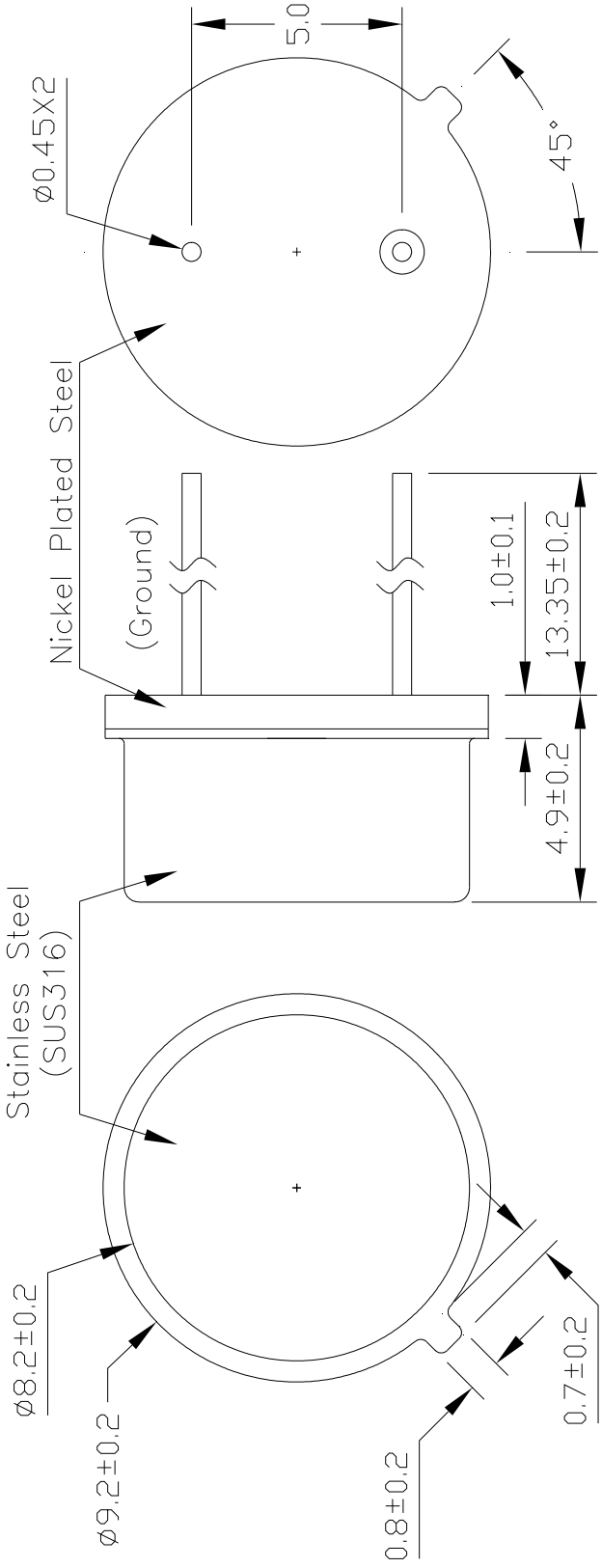

Figure 1

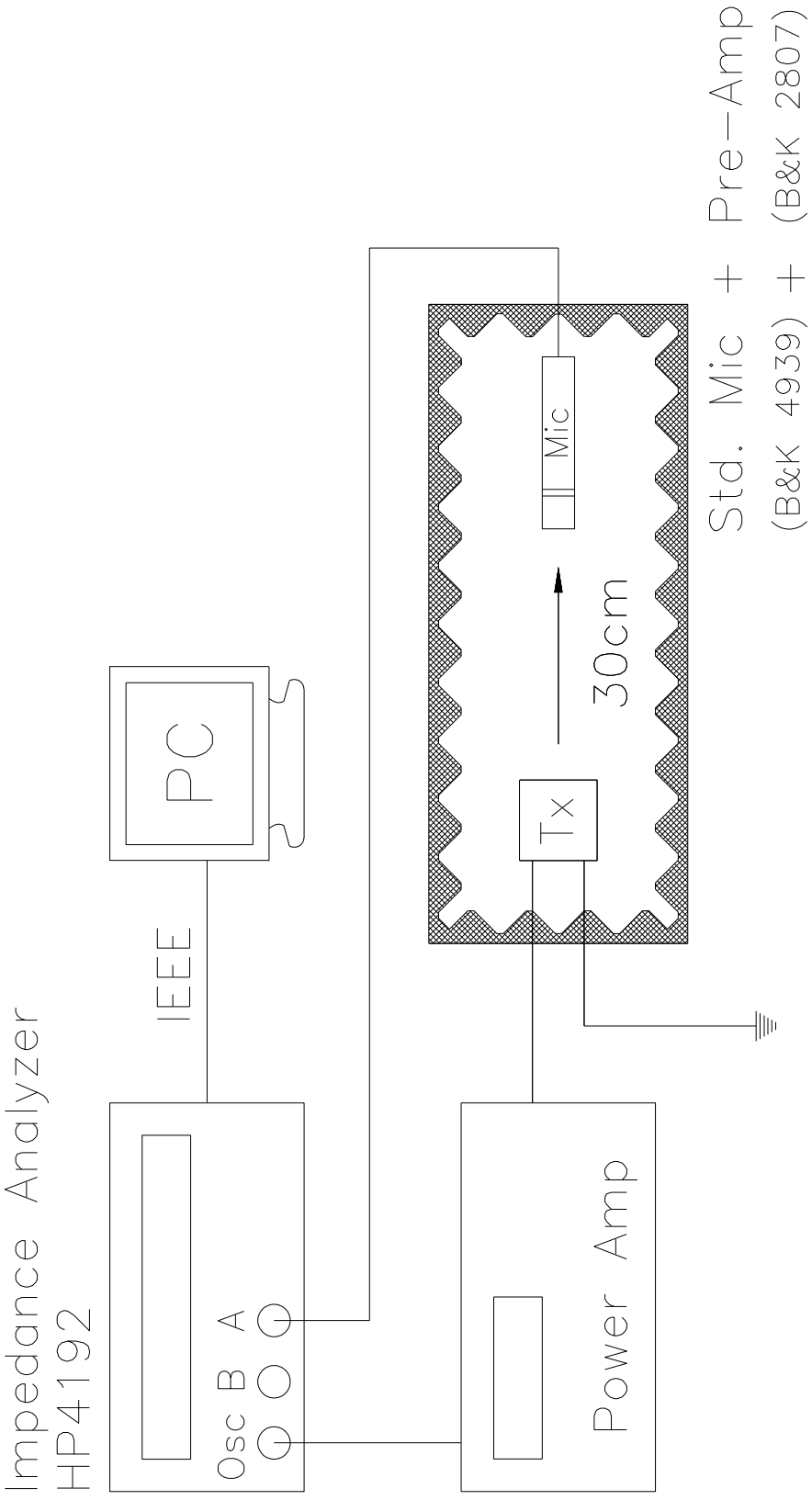
Impedance Analyzer
HP4192
Osc B A
IEEE
PC
Power Amp
Tx
30cm
Mic
Std. Mic + Pre-Amp
(B&K 4939) + (B&K 2807)

Figure 2

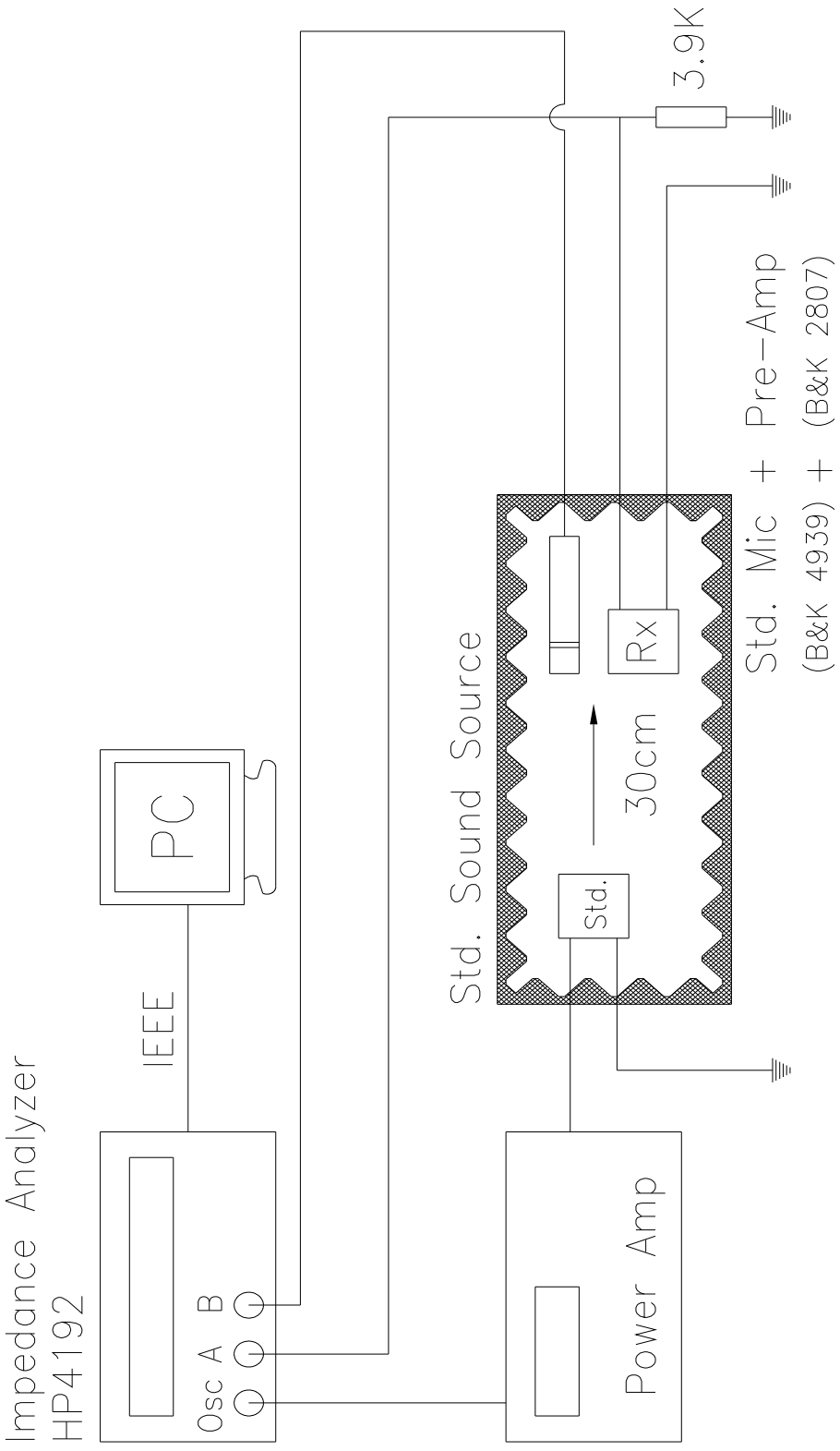
3.9K
Std. Mic + Pre-Amp
(B&K 4939) + (B&K 2807)
Rx
Std. Sound Source
30cm
Std.
PC
IEEE
Impedance Analyzer
HP4192
Osc A B
Power Amp

Figure 3