## 1 Scope

The standard enclosed (E) type transducers can be used for outdoor installation, or, because of its special dust-proof construction, can be used in a dusty atmosphere. The transducers consist of a metal housing with integral metal diaphragm, which operate at resonance on the fist harmonic overtone. The backs of transducers are completely sealed with resin protecting from exposure the environment.

## 2 Part Number

400ER25U 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) | 40KHz±1KHz | HP4192A Impedance analyzer |
| 4-2 | Sound Pressure Level | 105dB (min) | at Fc;<br>0dB re 0.0002μbar per 10Vrms at 30cm<br>10Vrms sine wave input<br>detail see attached Figure 2 |
| 4-3 | Sensitivity | -66dB (min) | at Fc; 0dB=1Volt/μbar<br>detail see attached Figure 3 |
| 4-4 | Bandwidth | 1.0KHz (min) | -6dB |
| 4-5 | Capacitance | 2800pF | ±20%, measured at 1KHz |
| 4-6 | Max. Driving Voltage | 20Vrms | cont. |
| 4-7 | Total Beam Angle | 35° (TYP.) | -6dB Main Beam |
| 4-8 | Housing Material | aluminum | natural |
| 4-9 | Operation Temperature | -30℃ to +70℃ | |
| 4-10 | Storage Temperature | -40℃ to +80℃ | |

## 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 below

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.

## 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.**