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The field of implementation of ultrasound transducer is vast. It is very difficult to cover each and every aspect of this special device as its application in the field of technology has created an immense change which has in turn provided us with innovative equipment for use in measuring distances in air, water, fluid media or for other applications. A single transducer is capable of generating and receiving a signal but often these two operations are segregated in order to optimize the performance of each task..

Devices in which these transducers are used to measure aerial distances in air include level detectors for large containers, intruded alarms and proximity warning devices. The operating range for these devices can be determined based on its operating frequency and its power utilization. The range of this equipment can be modified as well. It can be extended by narrowing the bandwidth which reduces the input power requirement thereby minimizing the interference and objections from outside the signal path.

However if the signal is too narrow atmospheric condition can cause it to divert from its original path especially at larger distances. The predominant characteristic like the mechanical resonance frequency of a ultrasound transducer is a function of the physioelectric ceramic element. It also depends on the thickness and the diameter of the metal diaphragm installed inside it and the orientation in which the ceramic unit is mounted. Another function of the transducer known as directivity depends on the wavelength of the emitted signal, the diameter of the area radiating it and the uniformity of the vibrations. All these factors are interdependent on each other like if the wavelength is decreased or the area of radiation is increased it can be seen that the angle of the beam becomes narrower. .

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James Blee - About Author:
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