

Title (en)

Waterproof transducer for half-wavelength array

Title (de)

Wasserdichter Wandler für Halbwellenwandleranordnung

Title (fr)

Transducteur étanche pour une array à demi-longueur d'onde

Publication

**EP 1202249 A1 20020502 (EN)**

Application

**EP 00402981 A 20001026**

Priority

EP 00402981 A 20001026

Abstract (en)

The ultrasonic transducer device (10) for a  $\lambda/2$  ultrasonic sensor phased array comprises a rectangular housing having thin sidewalls (13), having a height  $h$ , and having a rectangular or elliptical membrane (12) attached to the upper extremities of the sidewalls, and having a longer side  $A$  and a shorter side  $a_1$ , and a vibrator (11) attached to said membrane (12) for causing said membrane to vibrate. According to the present invention, the thickness  $e$  of the sidewalls fulfils the following equation  $\frac{e}{a_1} = \frac{d_1 - a_1}{2a_1} \leq \frac{1}{8}$  with  $d_1 \leq \lambda/2$ ,  $\frac{h}{d_1} > 0.1$   $\times d_1 \leq h < 0.6 \times d_1$ , with  $d_1 = \lambda/2$  so as to avoid generation of parasitic flexural vibration of said sidewalls, and the longer side  $A$  has the following relation with the shorter side  $a_1$ :  $1.5 \times a_1 \leq A \leq 3 \times a_1$ . The device is sensitive and robust and may be used for indoor and outdoor applications such as parking-aid systems for vehicles. <IMAGE>

IPC 1-7

**G10K 11/00**; **G10K 13/00**; **G10K 9/125**

IPC 8 full level

**G10K 9/125** (2006.01); **G10K 11/00** (2006.01); **G10K 13/00** (2006.01)

CPC (source: EP)

**G10K 9/125** (2013.01); **G10K 11/004** (2013.01); **G10K 13/00** (2013.01)

Citation (search report)

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Designated contracting state (EPC)

FR

DOCDB simple family (publication)

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