



Receivers

The receiver converts an electrical signal into sound. A cross section of a typical Knowles receiver is shown in Fig. 1. The basic components of the receiver are: a coil of wire, a metal U-shaped reed called the armature, a pair of permanent magnets, a drive rod, and a diaphragm.

The coil and armature act as an electromagnet. An alternating current in the coil causes the polarity of the armature to switch back and forth from north to south. The free end of the armature bends slightly up and down as it is attracted alternately to the top

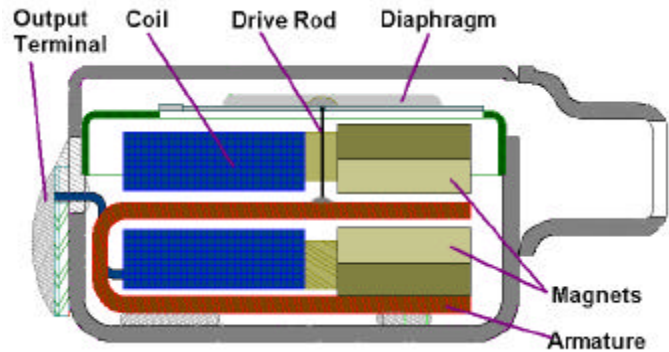


Fig. 1: Cross section of a Knowles EH receiver

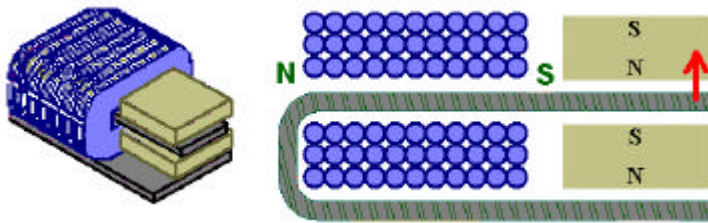


Fig. 2: The motor of the receiver has a coil, an armature, and a pair of permanent magnets.

and bottom magnets (Fig. 2). The diaphragm, pulled along by the drive rod, pumps air in and out of the receiver. The mechanical motion of the armature is thus converted into sound.

The sound output of a typical Knowles' receiver is shown in Fig. 3 in units of dB SPL (sound pressure level) relative to 20 μ Pa. The receiver components can be modified to produce more or less output at lower frequencies or to reduce or increase the higher frequency peaks.

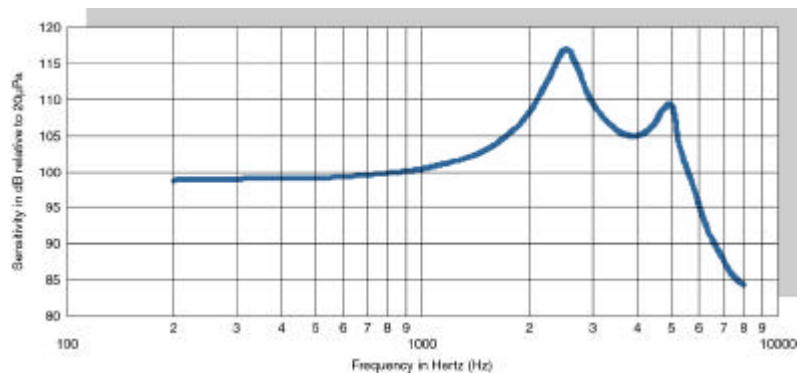


Fig. 3: EH output in dB SPL to a nominal 0.7 mA AC current