

Title (en)  
MAGNETIC RESONANCE SENSOR

Title (de)  
MAGNETISCHER RESONANZSENSOR

Title (fr)  
DETECTEUR A RESONANCE MAGNETIQUE

Publication  
**EP 1007909 A1 20000614 (DE)**

Application  
**EP 96946119 A 19961227**

Priority  
DE 9602513 W 19961227

Abstract (en)  
[origin: WO9829712A1] The invention relates to a sensor sensitive to a magnetic field, the output signal of which makes it possible to obtain simultaneously information about the distance, rotational speed (number of rotations) and direction of rotation of a magnetic field. The magnetic field can be generated by a permanent magnet and/or by the action of an electric current. The aim of the invention is to develop a sensor, the operating frequency of which markedly exceeds the state-of-the-art cut-off frequency  $f_{Gr}$  for magnetic sensors having bistable magnetic elements (BME) as core, and whose output signal simultaneously contains information about the distance, number of rotations and direction of rotation of a magnetic field. Since the cut-off frequency  $f_{Gr}$  of the large Barkhausen effect (LBE) is determined by objective physical processes, a different principle of physics must be used for the sensor function described in the present invention. The magnetic resonance sensor differs in its function from other sensors sensitive to magnetic fields, which also utilize a resonant circuit, in that it uses a BME as core of the sensor coil and that it offers the possibility to measure simultaneously the number of rotations, distance and direction of rotation.

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