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(54) Title: MAGNETIC SENSOR FOR DISPLACEMENT MEASUREMENTS

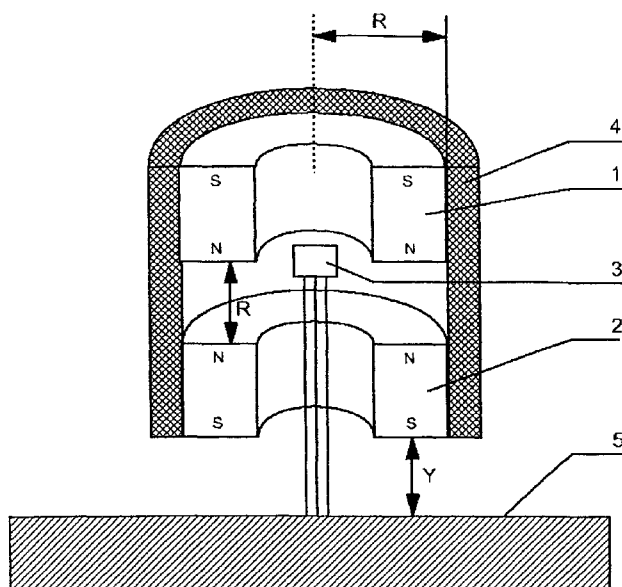


Fig.1

(57) Abstract: The subject of the invention is magnetic sensor for displacement measurements, esp. in the field of metrology of non-electric signals. Measuring such physical quantities as force, pressure, mass acceleration, strain, vibration, etc. is particularly promising. In the invention, the magnetic sensor for displacement measurements consists of two ring magnets (1) and (2), advantageously neodymic, in parallel arrangement with like poles facing each other or two induction coils connected in opposite phase relation, advantageously within the distance equal to radius (R) of each magnet or coil. Ring magnets (1) and (2) or induction coils are permanently set inside the body (4) made of a material characterized by small thermal expansion coefficient within the range below 6×10^{-6} (m/mK), advantageously a ceramic one. In the internal space between the ring magnets (1) and (2) or induction coils, the linear Hall sensor (3) (or other sensor for magnetic flux strength measurement) is placed.

AMENDED CLAIMS

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1. Magnetic sensor for displacement measurements comprising of ring magnets and a linear Hall sensor, **characterised in that** it consists of two ring magnets (1) and (2), placed in parallel arrangement with like poles facing each other. Additionally, ring magnets (1) and (2) are permanently set inside the body (4) made of a material characterized by a small thermal expansion coefficient within the range below 6×10^{-6} (m/mK). In the internal space between the ring magnets (1) and (2) there is a linear Hall sensor (3), or other sensor for magnetic flux strength measurement.
2. Magnetic sensor according to claim 1, characterised in that the ring magnets (1) and (2) are neodymic.
3. Magnetic sensor according to claims 1 and 2, characterised in that the ring magnets(1) and (2) are placed within a distance between them equal to the radius (R) of each of the magnets.
4. Magnetic sensor according to claims from 1 to 3, characterised in that the body (4) is made from a ceramic material.