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ABSTRACT

MAGNETORESISTIVE SENSOR

A magnetoresistive (MR) sensor comprising a layered structure formed on a substrate (11) includes a first (12) and a second (16) thin film layer (14) of magnetic material separated by a thin film layer of non-magnetic metallic material such as Cu, Au, or Ag, with at least one of the layers of ferromagnetic material formed of either cobalt or a cobalt alloy. The magnetization direction of the first ferromagnetic layer, at zero applied field, is set substantially perpendicular to the magnetization direction of the second ferromagnetic layer which is fixed in position. A current flow is produced through the sensor, and the variations in voltage across the MR sensor are sensed due to the changes in resistance produced by rotation of the magnetization in the front layer of ferromagnetic material as a function of the magnetic field being sensed.

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